

TECHNOLOGY DEPT.

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MOTOR AGE



OCTOBER 1944

CHICAGO PUBLISHED BY THE CHICAGO TRIBUNE

BRADLEY

Soft pressure does it!

Light inner ring . . . soft pressure . . . steel
against cast iron, well lubricated.

These are highlights of Steel-Vent's
proven ability to control oil with minimum
wear. In this combination of features lies
the foundation of today's strong demand
for Hastings piston rings.

Soft Pressure Does It—In Rebore, Too

When the going is extra tough, you'll find
the choice is Steel-Vent.

"We have used your Steel-Vent ring for the past *seven years* with very satisfactory results in *rebores as well as re-ring jobs* and to our knowledge we can say that there is nothing that gives us the results we get with your ring.

Our jobs are perhaps different than the average repair garage as *90% of our work is on road construction equipment*. We feel that if Hastings rings are capable of doing a satisfactory job in such motors they will certainly do a job in the average truck working under much less severe conditions."

Listen to

"RIGHT DOWN YOUR ALLEY"

American Broadcasting Company

EVERY SUNDAY AFTERNOON

4:30 Eastern Standard Time
3:30 Central Standard Time
2:30 Mountain Standard Time
1:30 Pacific Standard Time



HASTINGS MANUFACTURING COMPANY • HASTINGS, MICHIGAN
Hastings Ltd., Toronto

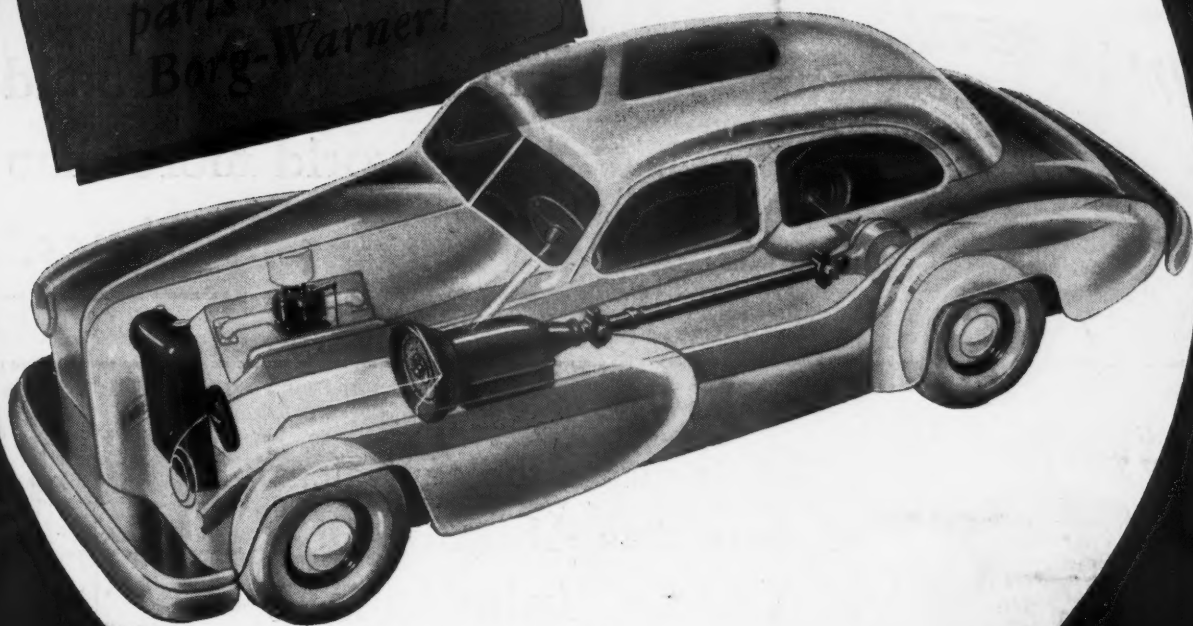
HASTINGS STEEL-VENT PISTON RINGS

U. S. PAT. 2,148,997



TOUGH ON OIL-PUMPING **GENTLE** ON CYLINDER WALLS

19 of the 20
makes of motor cars
embody essential
parts made by
Borg-Warner!



TRANSMISSIONS
TIMING CHAINS
OVERDRIVES
SYNCHRONIZERS
CLUTCHES

UNIVERSAL JOINTS
DRIVE SHAFTS
CARBURETORS
RADIATORS
TAPERED WHEEL DISCS



"IT'S A FACT!"

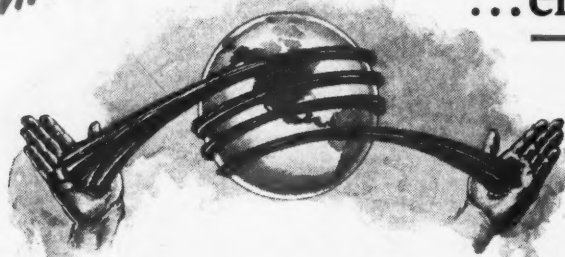


259,669,114 lbs.
of Marfak

manufactured by Texaco
up to April 1, 1946



"IMAGINE THIS!"



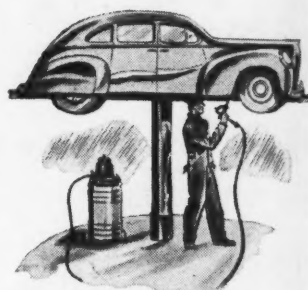
...enough to stretch around
the world more than
4 times!

"BUT HERE'S THE PAY OFF!"



... it means the equivalent
of more than 480,000,000
MARFAK lube jobs...

S-T-R-E-T-C-H-I-N-G the lives of millions of
cars and giving their owners billions of
smoother, easier-riding miles!



MARFAK is backed by strong and continuous advertising in national magazines and over the air — to millions of motorists every month.

MARFAK is one of the famous Texaco petroleum products that makes regular customers out of car owners — for Texaco Dealers ... and one of the many reasons why *Texaco Dealers are busy dealers!*

THE TEXAS COMPANY



*A Great Line-up
for*
TEXACO DEALERS

Sky Chief and **FIRE-CHIEF** GASOLINES
HAVOLINE and TEXACO MOTOR OILS • MARFAK
CHASSIS LUBRICATION • REGISTERED REST ROOMS

TUNE IN ... Texaco Star Theatre presents the new Eddie Bracken show every Sunday night. See newspapers for time and station.



Tune-Up with **TOON-OYL**

by
PERMATEX

Before you Tune-Up MECHANICALLY
... Tune-Up CHEMICALLY!

FIRST, add PERMATEX TOON-OYL
to crankcase oil and let car idle. Sludge
and gum binders that interfere with the
smooth operation of valves, piston rings,
oil lines and oil screens, instantly will
be dissolved!

THEN you'll have a CLEAN ENGINE,
ready for accurate, thorough mechanical
adjustments!



PERMATEX COMPANY, INC., BROOKLYN 29, N. Y.

R_x
ADD 1 QUART OF
PERMATEX
TOON-OYL TO 5
OR 6 QUARTS OF
ANY TYPE OF
MOTOR OIL IN THE
CRANKCASE

OCTOBER, 1946

When writing to advertisers please mention Motor Age

3

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2 Famous Names

WATERBURY

Simplicity

Motor Rebuilding Equipment

WHEN two such names become associated in the manufacturing of precision automotive equipment the results can only be the happiest for the automotive trade. Such a joining of names took place when the WATERBURY TOOL Division of Vickers, Incorporated, of Waterbury, Conn. took over the SIMPLICITY line of precision automotive rebuilding equipment.

This means much to the automotive trade as WATERBURY TOOL is one of the outstanding manufacturers of precision machinery in the United States. In their 47 years of operation, the major share of their efforts has been directed in assisting the United States Navy and Army in developing improved ordnance and auxiliary machinery equipments. Naturally this has resulted in the development of very high precision standards in their workmanship, which will be reflected in their production of SIMPLICITY equipment. The experience gained in the military fields will be applied to the production and improvement of SIMPLICITY precision motor rebuilding equipment.

All precision motor rebuilding equipment manufactured under the WATERBURY-Simplicity label will stand for the last word in reliable engineering and good workmanship, and WATERBURY-Simplicity equipment will play a vital role in lowering costs and improving repair work for the parts jobber and garageman.

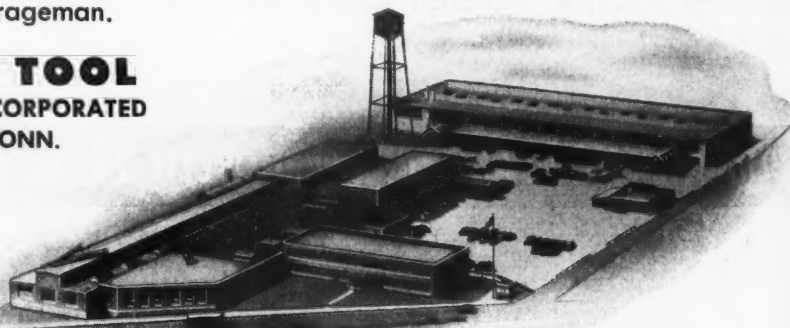
WATERBURY TOOL
DIVISION OF VICKERS INCORPORATED
WATERBURY 91, CONN.

FOR 47 years the name of WATERBURY TOOL, Division of Vickers Incorporated, of Waterbury, Conn. has been associated with the very finest precision machinery for use by the United States Navy and Army, and in the development of improved ordnances and auxiliary machinery equipments.

FOR 25 years the name of SIMPLICITY has been tops in automotive circles as a manufacturer and distributor of one of the best known lines of precision automotive rebuilding equipment.



WATERBURY-Simplicity equipment will be sold through distributors handling definite franchised territories. There are still a number of choice territories open and we solicit inquiries from well financed distributors in the automotive field. We will be in a position to make deliveries shortly after January 1st.



IT'S A FACT!



The Moog X-Plus Piston Ring set-up is a package of FULL POWER for worn motors. The worst oil pumpers, the engines with plenty of blowby, are licked with Moog X-Plus FULL POWER Piston Rings.

Don't take our word for it—install a set and judge for yourself. Your customers will agree you know how to put back FULL POWER in worn motors.

Ask your jobber or write us for FULL POWER FACTS today. Moog Piston Ring Co., Division Moog Industries, Inc., St. Louis 14, Mo.

MOOG
X-PLUS PISTON RINGS
 U. S. PAT. NO. 1,771,198)

*The Moog X-Plus Steel Oil Ring is the back bone of the Moog overhaul set-up. A different type ring for each groove — each ring has its job and does it — Delivers FULL POWER.



MOOG IS THE BUY-WORD FOR SPRINGS AND COIL ACTION PARTS

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This OLDSMOBILE was a

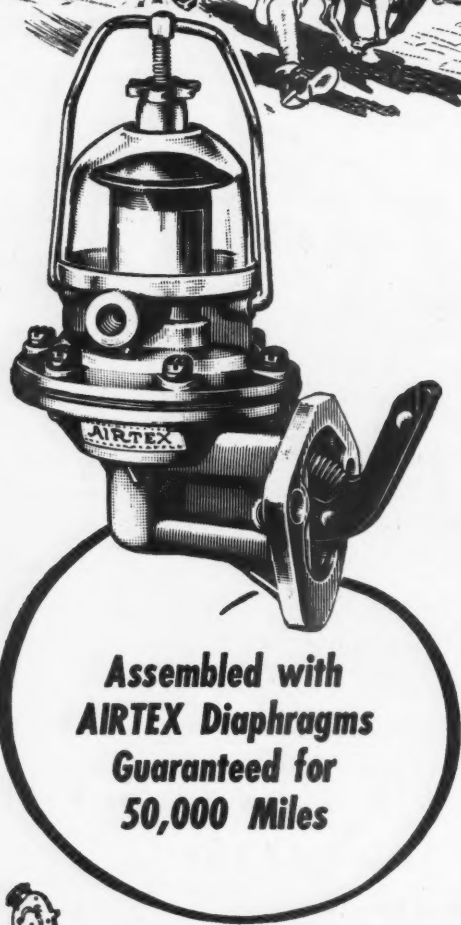
"NEW-MOBILE" in 1902



AS LATE as 1902, manufacturers were still making fenderless cars with light wagon bodies, bicycle wheels, chain drives and tricycle tiller type steering rods.

This "new" 1902 Oldsmobile was advertised: "Used yesterday, in use today and ready for tomorrow."

AIRTEX Fuel Pumps have given satisfying service for many years and are everywhere regarded today as a standard of dependable performance.



Assembled with
AIRTEX Diaphragms
Guaranteed for
50,000 Miles

AIRTEX
Factory Tested **FUEL PUMPS**

The secret of AIRTEX dependable performance lies in precision construction: accurate machined parts . . . some requiring tolerances of one to two thousandths of an inch; the 50,000 mile guaranteed diaphragm; absolutely leak-proof diaphragm assemblies; and uniform high pressure castings that are non-porous, warp-proof, strong and accurate.



"Airy" Tex says:

"Your profits climb with the AIRTEX Line"

AIRTEX AUTOMOTIVE DIVISION

CHEFFORD MASTER MANUFACTURING CO., INC.

FAIRFIELD, ILL.





Complete as a Harvest Dinner...the **Delco-Remy Line**

ORIGINAL-EQUIPMENT PARTS

The Delco-Remy line gives you a real "spread"—substantial and complete.

It includes all the fast-moving electrical parts you need for everyday service on Delco-Remy-equipped vehicles. That's the "meat" of the line. But there are plenty of "side dishes" too, for the Delco-Remy line includes parts for older model cars and other small-demand parts that help round out your electrical service.

What's more, the demand for Delco-Remy parts continues to grow, as more and more Delco-Remy-equipped vehicles appear on the road . . . as more and more owners look to you for original-equipment electrical parts to maintain peak performance.

For a steady harvest of business, you can't match the Delco-Remy line. It has been the leader in the field for fifty years.

DELCO-REMY ELECTRICAL EQUIPMENT FOR AIRCRAFT

Delco-Remy, long the leader in automotive electrical equipment, is now building electrical equipment for aircraft. Delco-Remy will make available the same strong merchandising and service support in this field as it has in the automotive field.



A UNITED MOTORS LINE

Delco-Remy original-equipment parts are available through leading independent distributors throughout the United States.

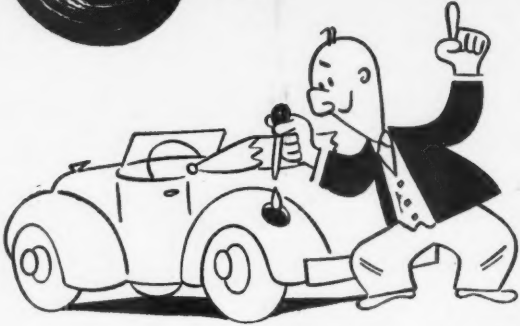
Delco-Remy

DIVISION, GENERAL MOTORS CORPORATION
ANDERSON, INDIANA

WHEREVER WHEELS TURN OR PROPELLERS SPIN

you use less

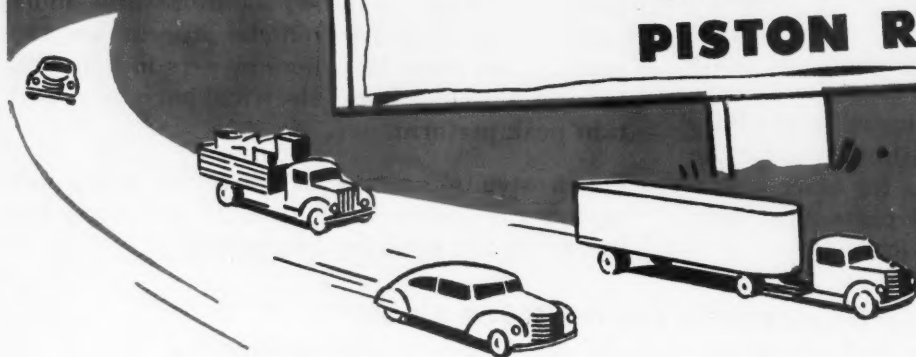
GAS



WITH

Pedrick

"HEAT-SHAPED"
PISTON RINGS



TO GIVE YOUR CUSTOMERS top engine performance . . . power and pep they can feel immediately . . . greater gas and oil economy . . . always recondition with "Heat-Shaped" piston rings. Heat-Shaping makes better rings for longer wear, and only PEDRICK rings are "Heat-Shaped." WILKENING MANUFACTURING CO., Philadelphia 42, Pa. In Canada: Wilkening Manufacturing Co. (Canada) Ltd., Toronto.

For faster, better Cold Tube Repairs

USE AND SELL THE **INLAND** GREEN TOP LINE

Now you can make faster, better cold tube repairs on natural or synthetic rubber tubes . . . and provide your customers with a quick, sure way to handle *tube* emergencies on the highway. Here's the reason!

The long, low angle, beveled edge of the Green Top Patch means a strong, permanent bond with the repaired tube . . . a bond that will not pull or pucker. This performance-proved long bevel, clearly indicated by the 3 color plies, also eliminates any danger of abrupt edges damaging tubes or tire casings after repaired tubes are in use. Easy to apply; will not fail.

Get more information on this fast moving line! Ask your automotive jobber.

Inland Rubber corporation, 33 South Clark Street, Dept. M410, Chicago 3, Ill., a subsidiary of Minnesota Mining and Manufacturing Company.

BE SURE USE AND SELL **INLAND**

NOW AVAILABLE 3 WAYS!



Complete Storage Unit for your shop wall

Contains patches and patching sheet for more than 250 repairs—approximately \$150.00 for you. Keeps patches, patching sheet, solvent and tools clean and ready to use. Your jobber carries replacement supplies. Complete, only \$5.50.



Motorist's Kit

Emergency Tube Repair Kit sells itself on your shelves. Each kit has 5 patches, one 2" x 5" patching sheet, and generous supply of solvent. Takes care of any roadside tube emergency. Box of 24 kits, only \$3.24.



Shop Kit

Contains one 6" x 25" (150 sq. in.) patching sheet, 100 patches, solvent and buffer—enough for more than \$50.00 in tube repairs. Only \$1.65 per kit.

THERE'S MORE PROFIT

The King Ring Line includes Engineered Sets, Rebore-Rebuild Sets and Service Special Sets... the right ring for every job, for every make and model of motor.



MORE PROFIT IN THE RING LINE



Rebore-Rebuild Expander Piston Rings with Iron Expander Rings.



Engineered Set Piston Rings for Re-Ringing.



Service Special Piston Rings with Steel Expander Rings for Dealers.

IN THE KING LINE!



MORE **PROFIT** IN THE COMPLETE LINE

The complete King Line includes Pistons, Pins, Motor Bearings, Valves, Cylinder Sleeves, Water Pumps and Parts, Front End Parts and Shackles . . . all in one catalog from one jobber. That's real service!

KING QUALITY

"Building for the future on a 26 year record"

ST. LOUIS 10, MO., U.S.A.

PISTON RINGS • PISTONS • PINS • VALVES

BOLTS • BUSHINGS • SILENT-U SHACKLES



BEARINGS • WATER PUMP PARTS

SLEEVES • WHEEL SUSPENSION PARTS

Switch to

NO OTHER SPARK



Money cannot
buy a better
Spark Plug

*The Spark Plug
that's Ignition Engineered*



Auto-Lite Spark Plugs are ignition engineered by men who design complete automotive electrical systems. That's why, "money cannot buy a better spark plug."

AUTO-LITE SPARK PLUGS

AUTO-LITE

PLUG GIVES YOU ALL THIS!



NETWORK RADIO

Tune in

DICK HAYMES

AUTO-LITE RADIO SHOW

with

HELEN FORREST • GORDON JENKINS' ORCHESTRA AND CHORUS

Thursdays 9.00 P. M., E.T.—CBS

AAA MAPS AND BOOKS

Auto-Lite's exclusive advertising in all AAA maps and books reaches one of the biggest motoring groups in America. Tells them about Auto-Lite when they are planning trips and ready to buy.



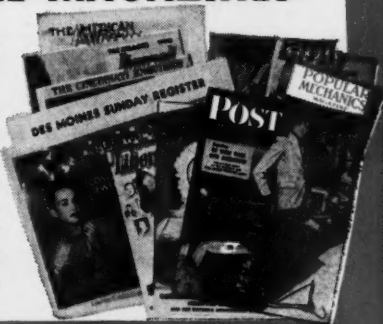
HIGHWAY SIGNS

Auto-Lite highway signs are spotted strategically on the nation's most heavily traveled highways. A constant reminder to drivers while their cars are in actual use—tie-in with car radios and AAA maps.



NATIONAL MAGAZINES

Color pages in American Weekly, Metropolitan Gravure, Saturday Evening Post, Collier's, Liberty, American Legion, Popular Mechanics, and Popular Science, carry the Auto-Lite story.



FARM PAPERS

Big color pages blanket rich farm market through Farm Journal, Progressive Farmer, Southern Agriculturist, Successful Farming . . . reaching 4,750,372 top power-equipped farms.

The Electric Auto-Lite Company
Toronto 1, Ont. • Toledo 1, Ohio



POINT OF SALE SUPPORT

Proved business builders like the Wrapper Plan, training film in technicolor by Walt Disney Productions, "Plug-Chek" Inspection Service, colorful window displays help dealers boost volume.



*"After 10 Years
Experience*

THE **SEAL LINE**

*Proves Best Balancer
on Market"*

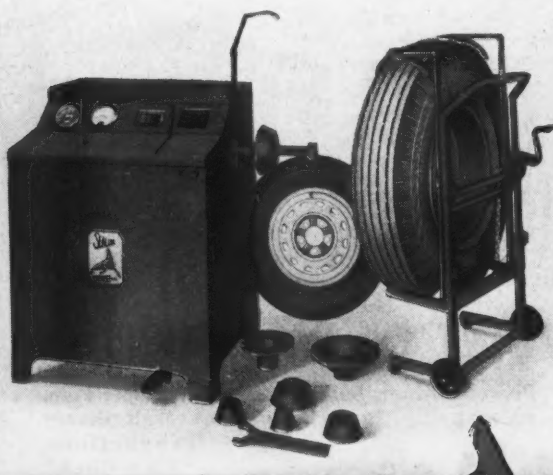
Says Mr. J. Paul Canaday
Gabriel Sales Corp., Indianapolis

Mr. Canaday says:

*"The above statement is
based on the SPEED, ACCURACY
and CUSTOMER SATISFACTION
of our SEAL LINE"*

There's PROFIT with SPEED

Seal Line Balancers will balance more wheels,
more accurately, in less time. Owners report
"70 to 100 wheels per day" per machine. It's
simple to operate. Just a glance at the instru-
ments and you know the exact amount of weight
and the correct position for Dynamic and Static
balancing up to 100 M.P.H. Road testing elim-
inated. It's right the first time. Flexible—Truck,
Bus and Car wheels. No jobs to turn down. The
best in balancing equipment is SEAL LINE.



REMEMBER SEAL LINE
"The Fastest Thing on Wheels"
Write...
H. C. SCHILDMEIER CO.
310 N. SENATE AVE.
INDIANAPOLIS 2, INDIANA

MOTOR AGE

With Which Is Combined AUTOMOBILE TRADE JOURNAL

FOR AUTOMOTIVE SERVICEMEN

Vol. LXV, No. 10

October, 1946

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In This Issue

News Bulletin	17
Slants on the News	18
Solve Your Labor Shortage	20
OPA Cracks Down	21
Larry Puts Himself on the Pan...by J. Edward Ford	22
What's Your Batting Average?	24
Willys Announces Bigger Jeep	25
Mechanics in Glass Shops...by Charles M. Kenyon	26
Selling Power.....by Ed Hevner	28
Refinishing Station Wagon Bodies	29
The Battery and How It Operates by William H. Crouse	30
Fleet Maintenance Means Steady Profit by Harrie H. Bierman	32
Motor Age Picture Gallery	33
Frank the Fixer (Cartoon)	36
No Cars—But Lots of Coffee...by Harold J. Ashe	37
Shop Kinks	38
Motor Age News	40
Readers' Clearing House	42
New Products	46
Legally Speaking	112
Advertisers' Index	174

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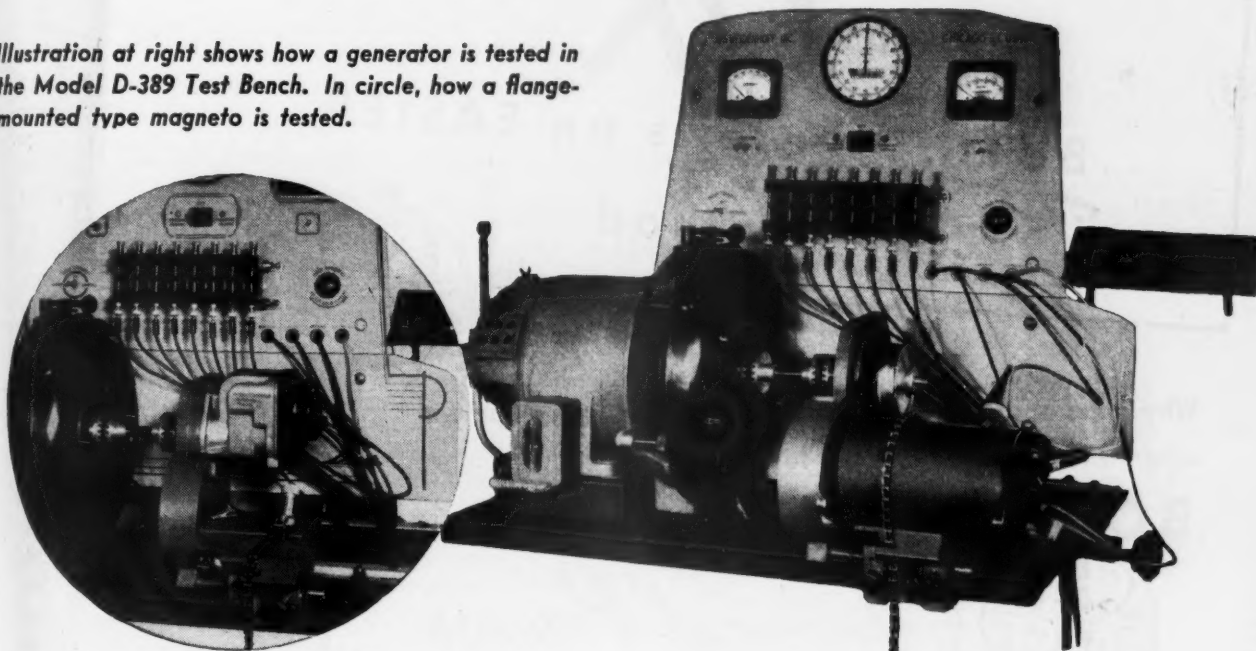
PAUL WOOTON, Washington Member of the Editorial Board

WEIDENHOFF

MODEL D-389

Combination Generator and Magneto TEST BENCH

Illustration at right shows how a generator is tested in the Model D-389 Test Bench. In circle, how a flange-mounted type magneto is tested.



- Tests every car and truck generator, flange-mounted or Belt-driven up to the capacity of the motor.
- Tests generators and regulators.
- Tests generators without overloading by using field rheostat control on panel.
- Drives generator for sanding commutators and seating brushes.
- Tests flange or base mounted magnetos — all types, except vertical, on tractors and stationary engines.
- Makes running tests of magnetos in rotary spark gap.
- Checks lag angle as well as throw-out speed of impulse couplings.
- Reduction gears allow speeds as low as 50 r.p.m., useful for checking throw-out speed of impulse couplings.
- Furnishes accurate means to check "coming-in" speeds of magnetos.
- Tests vertical type magnetos, using Model D-347 vertical drive (optional).

Write for Catalogs 54 and 55 for Detailed Information

ENGINE ANALYZERS • BATTERY CHARGERS • MAGNETO TESTERS

JOSEPH
WEIDENHOFF
INC.
CHICAGO 24, ILLINOIS

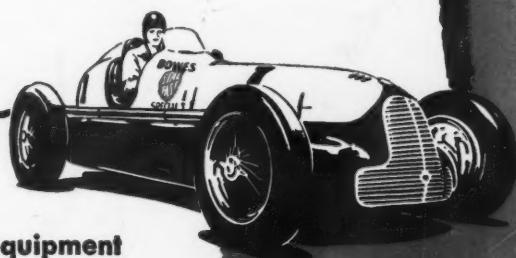
TEST BENCHES • ELECTRICAL TESTING AND SERVICE EQUIPMENT



If you Insist on
VULCANIZING Tubes . . .

OK

*BUT . . . there is an EASIER,
 Better method*



Why mess around with time-taking vulcanizing equipment
 when it is a well established fact that

BOWES



PATENTED
Chemical Process
TUBE REPAIR METHOD

is Easier, Quicker . . . BETTER!

"Stays Put" on Synthetic

● For more than 20 years thousands of tire repair men, from coast
 to coast, have successfully used the Bowes "Seal Fast" patented
 chemical process method.

If you have the "cold patch" complex, get out of your mind that
 the Bowes Method is to be confused with the so-called cold patch.
 True . . . no heat is necessary . . . but also true that ours is a patented
 chemical process which actually welds the repair to the tube so that
 at the repair point the tube is *actually stronger* than any other spot
 in the tube.

The Bowes Distributor in your territory can prove all these
 statements to you in not to exceed ten minutes . . . show you how
 to do a better and more profitable job of tube and casing repair.

BOWES



TIRE REPAIR SYSTEM

**BOWES "SEAL FAST" CORPORATION
 INDIANAPOLIS 7, INDIANA**

**A FAST-
 MOVING
 LINE!**

★ BOWES AUTOMOTIVE
 SPECIALTIES are outstanding.
 Whether it is tube or casing
 repairs or the many other
 Bowes automotive products,
 you are always out in front if
 you are a Bowes Dealer. Our
 National Advertising directs
 the discriminating motorist to
 your door where he knows he
 will get fair, honest treatment
 . . . and . . . high quality
 repairs and equipment.

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NEWS BULLETIN

★ A great fight is brewing in the new Congress over restrictions on the power of labor unions.

★ Despite current shortages of certain service parts, Pontiac dealers' parts sales established an all-time record high of \$6,021,200.

★ Price ceilings have been lifted on foreign made automobiles.

★ Worried over the effects of black market operators and unethical actions of a few dealers, factory officials are readying programs to aid legitimate dealers.

★ Some dealers are reporting receipt of cars without starting batteries.

★ C.P.A. has announced that it will continue to keep strict control over the export of new cars and trucks.

★ N.A.D.A. reports that gross profit margin on customer labor sales has decreased approximately 20 per cent under the pre-war average.

★ Willys-Overland has a six cylinder job which will be ready for announcement early in 1947.

★ Before raising mechanics' pay, O.P.A. advises shops to make certain they have qualified under SSR 72.

★ Tire manufacturers shipped almost as many replacement passenger car tires during the first seven months of this year as they did during the entire 12 months of 1941.

★ While the five months strike crippling the lead industry is settled and shipment of refined lead increased in July to 35,591 tons, situation is even more critical than in past because of decline in imports and domestic scrap.

★ A survey of the shop equipment that dealers and independents intend buying as soon as available shows that parts bins, garage jacks, parts cleaners, wheel balancers, lifts and lathes, head the list.

★ Rubber production in former Jap-occupied areas will probably total 600,000 long tons in 1946, and 950,000 long tons in 1947.

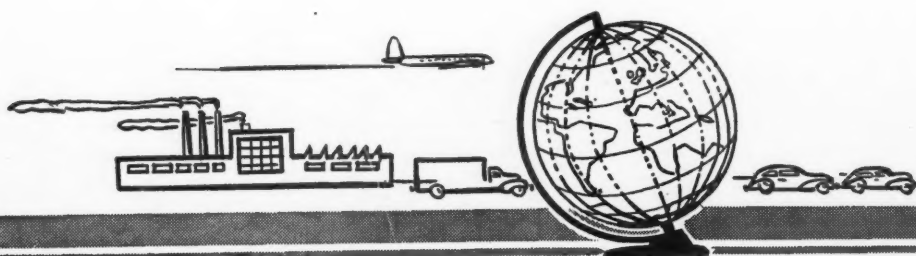
★ Survey by Philadelphia Evening Bulletin shows that 27 per cent of car owners have cars repaired by dealer who sold the car; 7.8 per cent by some other car dealer and 55.2 per cent by an independent shop; 7.7 by filling stations, and 2.3 per cent do their own repairs.

★ Up to September 21, Chevrolet produced 198,523 cars, Pontiac 66,154, Olds 54,755, Buick 77,813, Cadillac 14,379.

★ Borg-Warner Corp. has acquired the propeller plant of the A. O. Smith Co. at New Butler, Wis., a suburb of Milwaukee. After new machinery is installed, the plant will be used for manufacture of automatic transmissions.

★ Buda Company will resume manufacture of Diesel truck engines at Harvey, Ill., soon according to a company announcement.

★ Foremen in five Chrysler Corporation plants voted September 10 in favor of the Foremen's Assn. of America as their bargaining unit. The vote was 771 for the FAA and 417 against. The Corporation has withheld official comment on whether it will proceed to bargain with the foremen or follow the lead of Packard and wait for a decision on the issue in the courts.



OPA Restores Prewar Margins

Acting under the mandatory order to restore prewar margins, OPA issued an order on Sept. 26 (Amdt. 8, MPR 596) by which new passenger car dealers may obtain authorization to adjust their maximum prices so as to include the actual costs plus a margin of 33 1/3 per cent of the net cost for "custom" alterations and the addition of other than the regular extra or optional equipment or accessories. The order became effective Sept. 28.

These are the operations which are normally considered retail functions wherein a purchaser may request a dealer to fix up his new car in order to give it the appearance of a factory "custom-built" job. Some dealers make the alterations themselves and others may sublet the job.

Before the dealer may charge the additional costs, however, he must first obtain authorization from the Regional OPA office or from the nearest district office to which such authority may have been delegated. The dealer making such application must file with the OPA office the following:

(1) The make, year, series model, body type, serial and motor numbers;

(2) A description of the proposed alterations and the equipment to be added;

(3) The maximum retail list price of the car before alteration or addition of the equipment, together with the date of the invoice covering the sale;

(4) The market value of equipment to be removed and not used;

(5) The actual cost to the dealer

of the new material to be used in the alteration;

(6) The actual or estimated cost of equipment to be added;

(7) Actual or estimated cost of labor used to make the alteration or add the equipment;

(8) All costs items which are separately itemized;

(9) The price it is proposed to charge for the operation; and

(10) Any other facts which support the application.

Troubles Bedevil Auto Production

Several significant developments during September show clearly that the automotive industry still is wallowing in a sea of troubles. General Motors president, C. E. Wilson, reported that basic materials now are looming as the most serious barrier to continued production. He said that the corporation should have a price increase of around \$100 a car to get a satisfactory return at

present levels of production. Hudson, Chrysler, Nash, and Timken Axle lost considerable production because of wildcat strikes. Foremen at five Chrysler plants voted in an NLRB election to join the Foremen's Assn. of America. Production performance indicated that once again the industry would fall short of anticipated schedules for the month. Both Ford and Chevrolet announced that they had deferred indefinitely their light car programs.

All these developments are on the debit side of the ledger. They are the outward manifestations of the confusion, dislocation, and general trouble bedeviling the industry today. While total output in September undoubtedly will pass that of August, the gain is not big enough to warrant any particular optimism. The chronic falling behind projected schedules each succeeding month speaks for itself. That is why leading men in the industry say that it will be many months before peak production is attained.

New Passenger Car Registrations*

First Seven Months 1946 and 1941

MAKE	Seven Months		Per Cent of Total Seven Months	
	1946	1941	1946	1941
Ford.....	129,219	443,120	19.92	15.64
Plymouth.....	86,292	348,720	14.84	12.31
Chevrolet.....	83,917	686,321	12.93	24.23
Dodge.....	62,974	156,992	9.71	5.54
Nash.....	40,332	61,227	6.22	2.16
Hudson.....	32,594	51,849	5.02	1.83
Pontiac.....	30,619	221,954	4.72	7.84
Chrysler.....	30,537	109,256	4.71	3.86
Buick.....	27,924	241,196	4.30	8.51
DeSoto.....	27,792	66,539	4.28	2.34
Oldsmobile.....	23,761	182,869	3.66	6.46
Studebaker.....	20,439	79,698	3.15	2.81
Mercury.....	19,842	60,596	3.06	1.58
Packard.....	12,612	44,868	1.94	1.62
Cadillac.....	6,600	45,842	1.02	1.48
Lincoln.....	3,070	13,684	.47	.02
Crosley.....	80	431	.01	.02
All Others.....	240	17,643	.04	.62
Total.....	648,844	2,832,795	100.00	100.00

* Source of data—R. L. Polk & Co.
All States except Michigan included.



Ford and Chevrolet Defer Lightweight Car Programs

Another indication that the automotive industry is looking for a bright materials situation for more than a year ahead is the announcement by both Ford and General Motors that they have abandoned for the time being their plans to build a low priced lightweight automobile sometime next year. While the uncertain materials situation probably had a great deal to do with the decision, undoubtedly other factors are involved. Building construction difficulties at present are particularly bad, and although Chevrolet had obtained permission to proceed with construction of a new plant near Cleveland, procurement of materials would be extremely difficult. Also, present construction costs are unconscionably high. At any rate construction of the new plant has been halted. Another conjecture is that the companies may have found that they simply cannot build a car that would appeal to the public at a practical cost differential. Even at present high prices, backlog orders appear to indicate a market for current models that will not be satisfied for a long period, and since there probably would not be enough materials to build both current and lightweight models in volume there would be little point to diverting materials into a cheaper car. Neither company has indicated that the project has been abandoned permanently, but developments in the fields of costs, prices, and market demand undoubtedly will influence any future decision on if and when it again will be taken up.

Weekly Production Of Cars and Trucks In U. S. and Canada*

Week Ending	1946	Corresponding Week in 1941
Jan. 5.....	13,920	76,690
12.....	23,340	115,935
19.....	28,465	124,025
26.....	29,410	121,948
Feb. 2.....	29,295	124,400
9.....	23,785	127,675
16.....	21,555	127,610
23.....	19,410	127,740
Mar. 2.....	17,575	126,550
9.....	23,050	125,915
16.....	35,020	131,410
23.....	37,285	123,805
Apr. 6.....	47,735	116,255
13.....	49,425	99,260
20.....	57,565	99,945
27.....	64,620	108,165
May 4.....	67,060	130,610
11.....	71,335	132,380
18.....	48,565	127,255
25.....	53,020	133,560
June 1.....	31,895	106,395
8.....	43,175	133,645
15.....	50,206	134,632
22.....	53,930	133,565
29.....	64,015	127,926
July 6.....	46,810	96,457
13.....	74,015	114,318
20.....	80,395	109,912
27.....	84,720	105,635
Aug. 3.....	78,190	62,146
10.....	77,825	41,795
16.....	88,990	45,550
23.....	91,360	45,525
31.....	74,960	39,965
Sept. 7.....	72,535	32,940
14.....	88,888	53,165
21.....	80,972	60,615
28.....	85,572	77,035
Total.....	2,031,083	3,998,994

*Compiled by Ward's Automotive Reports

Government Promises Lead To Maintain Car Output

Following a strong letter from George W. Mason, president of AMA, John W. Steelman, reconversion director, assured the automotive industry that enough lead would be made available. Mason had reported that unless action on lead was forthcoming, many plants might have to close down in a few

weeks. His warning joined that of C. E. Wilson, who told government officials that if the situation did not improve, G.M. would have to lay off some of its employees in October. He said that restricted supplies of lead and copper may prevent the industry from attaining even the limited levels of production attainable within the short steel supply and asked that at least 75 per cent of the tonnage used by the industry before the war be allotted to maintain production and employment.

Labor Productivity Lags Behind Prewar Standards

One factor which has accounted for the need for higher prices to car manufacturers is the continued low production efficiency of employees. General Motors believes it now stands at about 80 per cent of prewar levels. Other companies report that worker efficiency is appreciably below the 1941 rate, but they do not give percentage figures. While there has been a general opinion in the industry that individual productive effort will eventually be brought back to normal, some personnel men privately are beginning to doubt seriously that it will be recovered for years, if ever. They say that the output per man will rise, but it will come from technological advancement and not from increased effort by the individual worker. One company says that it is beginning to think that the only avenue to lower production costs is the use of more automatic and semi-automatic machinery to replace workers who simply refuse to put more effort into their jobs.



Solve Your Labor Shortage with Vets

**Veteran Trainees are proving to be satisfactory labor both
from the point of view of the shop operator and of his mechanics.**

FOR the dealer service station manager or independent shop operator who faces a personnel shortage problem, either in competent mechanics or in good mechanic's helpers, there is a ready-to-hand solution—the U. S. Labor Department's Apprentice Training Program.

Although this Plan was established originally by Act of Congress in 1937, it recently has come into the limelight by reason of its pat application to the Returned Veteran employment problem. Participation in the program now appears to be working to the advantage of the Veteran apprentice. The shop personnel and the shop's management.

"We are more than pleased with our part in the Apprentice Training Program," reports E. O. Clifton, Packard dealer and chairman of the Miami, Fla., Apprentice Training Committee. "Our mechanics are all for it, our GI apprentices are doing remarkably well, and our shop's work output has almost doubled since the plan went into operation about 9 months ago."

There is considerable confusion in the Trade on the terms, "apprentice training" and "on-the-job training." The terms apply to two separate programs having approximately the same objective. Both are beamed toward making skilled mechanics out of men with little or no previous experience, by teaching them while they work — and earn.

Apprentice Training is a long-range program designed to give the trainee a complete training in a craft or trade. In automotive repair work, it calls for minimum shop instruction of 3 to 4 years plus a minimum 144 hours per year of classroom work. The latter is intended to teach the trainee *why* he does what he is taught to do. It includes such subjects as front end geometry and the theory of carburetion and automotive electricity.

On-the-job training is aimed at teaching a special skill (such as body, front end or brake work, engine tune-up) and calls for fewer instruction hours. It involves no required classroom time.

The two programs are activated by different agencies. The apprentice training plan for any locality is directed by its own local Apprentice Training Committee under the general supervision of the State and Regional Apprentice Training Committees and the U.S. Labor Department's Director of Apprentice Training. In shops where labor is organized, the local committee consists of representatives of the shop and the union.

(Continued on page 54)

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THE O.P.A. is using every possible method to enforce ceiling prices on automobiles. Not content with the usual methods of enforcing laws, the OPA enforcement officers seem to include the blackjack tactics of gangsters and shrouded intimidation of the Ku Klux Klan.

In Los Angeles recently the O.P.A. enforcement agents descended on a car dealer's establishment, and the illustration shows what happened to a car salesman for whom no warrant had been issued, about whom no complaints had been made, and who just happened to be in the showroom when the raiders arrived.

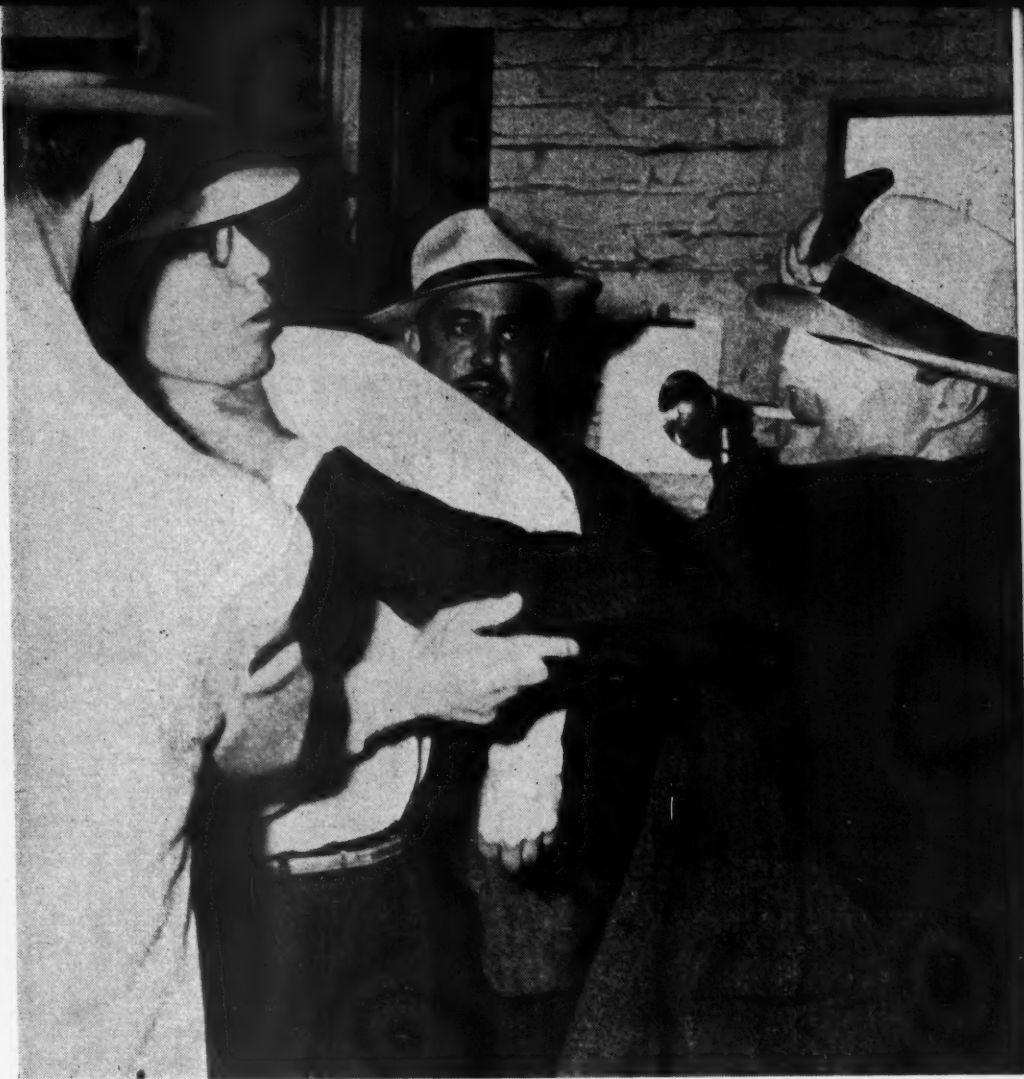
Certainly no one wishes or desires to take the side of or to approve the policies of men operating in black markets. They are breaking the rules laid down by the government, and they should be apprehended and punished just as the bootleggers of the prohibition era were punished.

In discussing the situation O.P.A. explains that enforcement of price ceilings is not a cream-puff affair, and they are sometimes forced to use a blackjack in self defense or to apprehend a reluctant suspect. That is quite probably true, but in the Los Angeles incident E. E. Clifford, a car salesman at a branch of the Taylor Automobile Company, happened to stop at the main office of the Company when the government agents swooped down on the agency in a raid to which agents had invited newsmen to accompany them. As he was not involved in the affairs of the establishment being raided, Clifford started to walk away only to be seized and threatened as shown in the picture.

Later, on being informed of the photograph, O.P.A. made an unprecedented demand that the identity of the blackjack swinging agent be kept secret so that his uses in further raids would not be nullified.

It should also be pointed out that Clifford was not struck, and it should also be emphasized that he was not arrested nor charged with any crime or violation of any O.P.A. regulation.

Fiat governments invariably have attracted thugs



O.P.A. Cracks Down

And demands that identity of black jack

wielding agent be hidden in anonymity.

and adopted gestapo methods. The record of the O.P.A. has been no exception, and the Los Angeles incident is an example. The brutal methods that one would expect in an European dictatorship, methods which have been shunned by established police, have been adopted by this agency; and the sooner that ceiling prices in all fields are eliminated, the sooner stable economic conditions will be reached.

While continuing to work for the revocation of the
(Continued on page 50)

Larry Puts



"You just take hold of the front like this and give a shove and—" He broke off the sentence with a grunt.

"HEY you!" called the over-dressed, baggy-eyed youth who stepped out of the 1947 Studebaker Champion coupe.

Tommy Winters, pulling a front wheel on an older car, looked up resentfully. Customer or not, no one (especially a playboy in two-toned shoes, fawn-colored slacks and a loud-check sports coat) had a right to come around lording it over another fellow just because the latter's hands were greasy. Still, Tommy remembered that Pop O'Neill always said a customer was entitled to the benefit of any doubt. Tommy got to his feet.

"Were you calling somebody?" he asked.

"Yes. I want this car fixed fast."

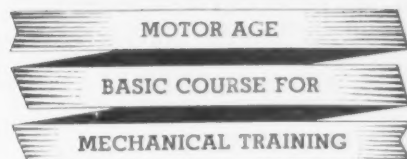
"What's wrong?"

"That's what I came in here to find out. All I know is, it sounds like a boiler full of bolts rolling

Himself on the Pan



Even Pop couldn't meet the dead-line Larry thought would be easy for this job, and Tommy learns that Pop knows as much about human nature as he does about automobiles.



By J. EDWARD FORD

downhill. I want it to be fixed by five o'clock tonight."

Tommy ran a hand over the back of his head. "I don't know," he said. "We're pretty busy."

"Don't put that record on again. They play it in every shop."

"I'll have to see Larry," said Tommy.

Larry was cleaning carburetor parts.

"There's a fresh bird over there," said Tommy. "He wants that new car of his fixed by five."

"Why not?" asked Larry without looking up. "There can't be much wrong with a car as new as that."

"You'd better talk to him."

"Where's Pop? Why can't he do it?"

"He had to run over to Boydstown on personal business."

Larry wiped his hands. "So I got to do his work and mine, too. Who's the guy?"

"I never saw him before."

Larry went over to the coupe and walked around it slowly. Despite careful bumping and repainting, both front fenders showed faint traces of big dents. There was a dark streak along the body where it had come off second best in a brush with another vehicle. Finally Larry stopped in front of the youthful owner.

"I don't see nothin' wrong," he said.

"Oh, a smart guy," said the owner. "You see this car is different. It's got an engine in it."

Larry stepped back in amazement, and Tommy could not tell whether it was done mockingly or whether Larry was really surprised. "You don't mean you got trouble with a brand-new engine?" asked Larry.

"It isn't so new. I had the first one of these cars in town."

"You must know people," said Larry.

"My father happens to be Mr. Powers."

"Oh," said Larry. "Jerry Powers, Glenrock's big mill owner and unofficial mayor. No wonder you could

get a new car. Well, start it up, if it will still run."

Powers climbed into the driver's seat and tramped on the clutch pedal. The motor came to clanging life.

"That's enough," shouted Larry. "You shot a bearin'. But how you ever done it I'll never know. Mind if I have a look-see at your oil?" he asked. Then without waiting for an answer, he raised the hood, pulled the dip stick, wiped it and re-inserted it. "Well, well," he said, as he took it out again and studied it. "When did you put oil in this job the last time?"

"What is this, a third degree?" demanded Powers.

"It ain't nothin' to me," said Larry. "But you ain't got enough oil in that crankcase to grease a griddle. No wonder the bearin' went."

"That isn't the point," said Powers. "I've got to have this car by five o'clock."

"I don't think we can do it."

Suddenly Powers' manner changed. "Listen," he said. "Be a good guy, will you? I'm in a jam. I almost ruined this car twice, and the old man won't allow me to drive it any more. I've got to have it back in the garage before he gets home or he'll know I had it out."

Larry scratched the stubble on his cheek. "We're awful rushed."

"Look. Here's ten bucks for yourself."

"Hmm," said Larry, giving the money a leisurely and loving look. "Maybe we could crowd it through."

"Now you're talking," said Powers. He passed the bill to Larry and started off. "See you at five," he called.

As soon as he had disappeared, Tommy turned to Larry. "How do you expect to replace a bearing in that time?" he asked. "It's half past two now."

"We can do it if you get the lead out," snapped Larry. "Take it over to that empty bay and drop the pan."

(Continued on page 64)

What's Your Batting Average?

A comparison of profit and loss ratio with national figures can be a valuable guide to your shop volume



ALL baseball fans can tell when Dominic DiMaggio is doing better than his brother Joe, 'cause why. 'Cause of the batting averages collected, and made up by the newspapers. Car dealers and repairmen can make a similar check to see how they are doing in comparison to national averages.

To provide such figures the Department of Commerce collects profit and loss figures from trade associations and other sources all over the country to produce a set of batting averages for different types of businesses. These statements are called Tables of Standard Ratios and cover each line of business separately, such as car

dealers, repair shops, filling stations, jewelry stores, pharmacies, etc.

The data listed in a table of standard ratios are the normal ones for each type of business. If the individual operator arranges his accounts in the same way he can quickly make comparisons which will show how he stands in relation to national averages. In other words, this comparison of his "batting average" with that of the group should show how he is doing, if he is running ahead, behind, or with the pack, and also, which is the pay-off of this procedure, where his expenses are out of line. Obviously to compare the actual

dollar and cents figures of a small business, with a large one would not be informative. To eliminate the factor of the size of the establishment, each item of expense is presented as a percentage of total sales.

With this information he is ready to really manage, to decide if his place of business is too expensive, or whether he is charging too much so that he is not getting his fair share of business, or whether the help are being paid too much, or whether he is right on the beam and bound for a happy retirement in Florida.

A study of each individual item will help to raise that key account—net profit. For instance, if the expense ratios are higher than average it may be due to low sales volume, or inefficiency or poor control over expenses. If the gross margin percentage is unusually high, the fault may be overcharging in which case the expense ratio will also be over the standard percentage.

The operating expense ratio may be higher than average, according to whether the building is owned or rented, for studies made prior to the war indicate that it is generally cheaper to rent it than to own it.

Expense ratios sometimes fail to show how the operator may be losing money on labor, in such cases it is necessary to resort to cost analysis, based either on the cost of doing a given piece of work, or on the cost per average sale; just as a team manager has to study the individual with reference to the team when his averages start to slip.

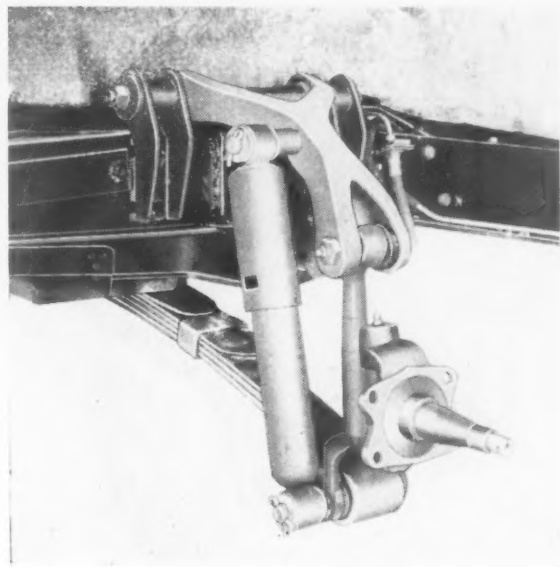
The size of the net profit ratio is not by itself a true indicator of how much profit the business is making for it must be viewed in the light of the sales volume and the total amount of capital invested, also it does not show to what extent the establishment may be carrying on unprofitable activities. It is not unusual for shops, in an effort to increase their dollar sales, to take on business regardless of the cost, in which case the excess expense eats up the larger

(Continued on page 52)



Above. The new Willys station wagon as it looks on the road.

Below. The single cross chassis spring of the independent front wheel suspension.



Willys Announces Bigger Jeep

An all-steel station wagon based on jeep design is the newest low-priced model.

WITH a 24 in. increase in wheelbase, the adoption of independent suspension for the front wheels, and tread width 8 in. greater than the military Jeep, the new Willys station wagon takes its place with full size American vehicles. Unlike the Jeep, this chassis has conventional two-wheel Hotchkiss drive and a wheelbase of 104 in.; front tread of 55- $\frac{1}{4}$ in., rear tread of 57 in., and bumper to bumper length of 174 $\frac{13}{16}$ in. The body is of all steel construction instead of plywood.

The rear floor, however, is ribbed and reinforced thoroughly with hard maple skid rails to give rigidity without increasing the weight to too great an extent.

The hood, suggestive of the jeep in its long horizon-

tal lines, is a one-piece alligator type. It is hinged at the rear end and extends well forward over the radiator grille and the headlamps.

The distinctive sharp lines of the jeep are also kept in the fenders. The passenger compartment is entered through one door on each side, unlike the conventional two-door design of other station wagons.

Rated gross vehicle weight is 3600 lb., and rated payload is the equivalent of five passengers or 800 lb. Maximum payload is 1000 lb. Curb weight of the vehicle, including gas, oil, and water, is 2800 lb. Maximum road speed is 65 mph.

The engine remains unchanged—four cylinder, L-head, 3 $\frac{1}{8}$ in. bore x 4 $\frac{3}{8}$ in. stroke, 134.2 cu. in. displacement, rated 63 hp at 4000 rpm with compression ratio of 6.48 to 1. Maximum torque is 105 lb. ft. at

(Continued on page 72)

Mechanics in Glass Shops



Left. Interior of repair shop making effective use of glass block construction.

Below. Plenty of daylight brightens the floor of a progressive dealer agency.



THE attractive appearance of glass block construction in a repair shop, service station or dealer agency is obvious from the illustrations. To the customer glass block looks clean, it looks modern, it looks progressive. After dark your light, diffused to an even glow, shines out beside the road; and in the daytime the increased light inside dispels the look of greasy gloom which tends to gather in the darker corners. By night or by day glass blocks are attractive. But are they practical for use in shop construction—how do they tie in with post war building plans?

The answer depends upon your particular problem. A glass block is not a brick; it is a pane of especially tough glass. A building built of glass is really built of masonry or steel frame, for structural strength. filled in with panels of glass blocks bound together with mortar and thin strips of steel.

Many car dealers and shop operators are considering glass blocks in their post war plans and many new buildings will undoubtedly contain vast amounts of glass construction. The pre-war trend was toward a wider use of glass in industrial construction; the war era itself saw a rapid increase in the use of the material; the building of tomorrow as it is now projected on the drawing-boards of prominent architects shows that glass block will be far more common than it is now. If you are planning to build in the future, you undoubtedly have thought of the advantages of glass



Above. This service station in the modern style uses glass block to make an attractive ornamental tower that draws the attention of the customer and at the same time lights a dark corner.

A survey of glass block construction as a building material and how operators of independent repair shops, service stations and dealer agencies are using it to good advantage.

by **CHARLES M. KENYON**

panels. If you are planning to renovate, you can also make effective use of a material which is just beginning to come to its own. If you want your building to look "modern," glass block can give the effect and at the same time serve a useful purpose.

The main purpose of a window is to let in light and at the same time to keep out the weather. That, too, is the main purpose of glass block, for it is designed as an improvement over the sash window in many ways. One of the major disadvantages of an ordinary window is that it frequently lets in the wrong kind

of light. A stream of bright sunlight for example, knifing across a dark workbench and reflecting from a highly polished surface to your eye is not useful light. Glass blocks have four surfaces which can be processed to direct and control the light which passes through them. Two of the many available designs seem to be particularly well fitted for use in the shop.

One of these, called the prismatic block, changes the direction of the daylight passing through it so that the light rays as they enter are reflected up toward the ceiling. The ceiling, acting as a huge reflector, then redirects the light downward diffused more evenly throughout the room. This type of block is designed for use only in panels above the eye level. Otherwise the light rays are directed into the workman's eyes. Because of the prismatic construction, these blocks look dark from below. They are not blocking out the daylight, however, they are simply chang-

(Continued on page 78)



SELLING POWER

Selling is Friendliness

By ED. HEVNER

THE other day I waited in the reception room of a printer. I listened to the telephone operator call up local merchants and sell them advertising space in a local magazine that her company published.

As I listened, my respect for her selling ability grew by leaps and bounds. "This gal is a saleswoman," I said to myself. "She's good."

When she finished her last call and had sold everyone she had phoned, I said, "I've learned a lot listening to you. If you can do all that by phone, you ought to go out to meet people and sell them in person."

The young lady looked at me in amazement. "Why, I couldn't sell," she said, "all I do is call them up on

This is the fourth in a series of articles on selling, written for the dealer and independent.

the phone. I couldn't go out and meet them."

If I ever saw a salesman, she was one, but she didn't even know it.

Millions of men and women are remarkable salesmen, but they don't know it. Some practice it subconsciously.

The reason is that they think selling is some mystic thing that's beyond them. That's poppycock. All of us sell to some extent right from the cradle to the grave, but few of us will admit we do.

To them selling is a mysterious something possessed only by professional practitioners of the trade. To others it is a black art steeped in intriguing mystery.

Reduced to its simplest definition, selling is conversation. It's honest, friendly talk between two people. It's visiting. It's helping folks. It's talking about their lives, their interests, their problems. It's doing something for others.

Sure, you can read whole books about it. They tell you what to do and what not to do. They diagram it all for you—the approach, the sales talk, the close, and all the other terms that complicate what is fundamentally a simple matter.

They make the art so deadly serious that you can't be natural, and naturalness is the salesman's most important quality.

What's worse, they scare away real salesmen by misrepresenting selling as something infinitely complicated.

Maybe you haven't thought of yourself as a salesman because you think selling is only for those who do nothing else.

Be yourself. Like people. Study them. Talk to them about themselves and their problems. Show them how you can help them.

Selling is simply friendliness applied to your work, sincere friendliness, a desire to serve. It's just easy-going natural conversation, a little visiting.

Selling is really very simple. Try it on that basis. Be friendly. Show people that you like their company. You'll be surprised at the results.



A thorough sanding is the foundation of a smooth, workmanlike finish on wood as on metal.



Close fitting joints insure rigidity and longer life for the reconditioned body.

SALES of station wagons are on the increase. Recent estimates indicate that orders for these multiple-purpose cars are 50% greater than before the war, also many late model wrecks were refitted with this swanky body-type while the fight was on. Inevitably this will lead to more refinishing business for repair shops as these bodies require more maintenance than metal bodies if their appearance is to be kept at its peak.

Wood bodies must be kept dry, for the end grain of their sections tends to take up moisture which leads to swelling at the joints and lifting of the varnish. Dirt, also, has a tendency to absorb moisture which the wood in turn will take to itself. If these bodies are kept clean and dry, they will retain their shiny swank for about eight months; then they must be refinished.

In all station wagon refinishing, the car is tightened and adjusted first, the door clearances are adjusted, the body bolts and screws are tightened, and the locks, handles, and other body hardware put in good shape. The car is then washed and dried and delivered to the painter.

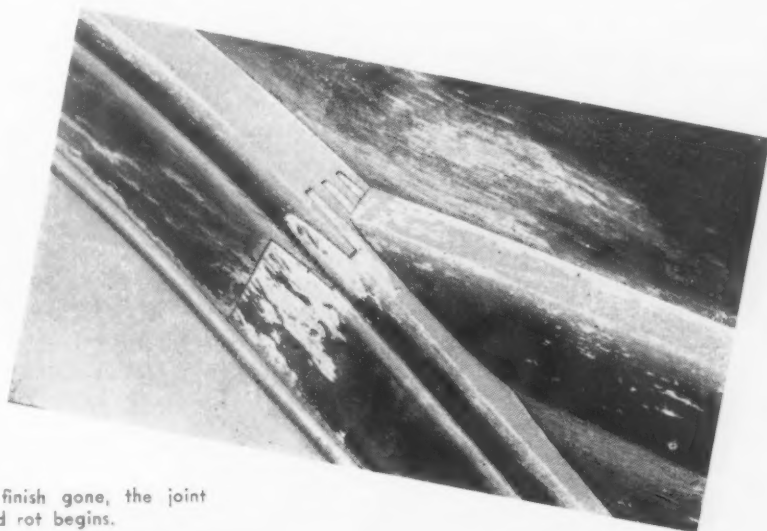
The whole process of wood body refinishing requires dryness and the shop specializing in this profitable form of endeavor allows lots of extra time for thorough drying between operations.

The painter goes all over the body with painter's ammonia or a

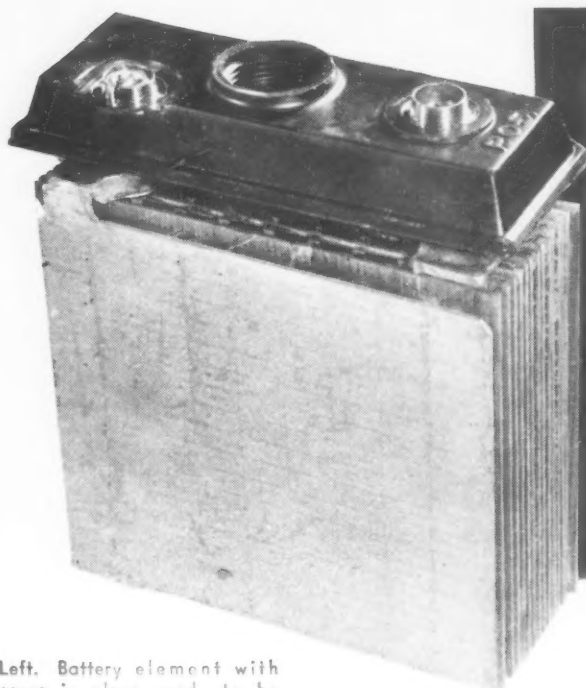
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Refinishing Station Wagon Bodies

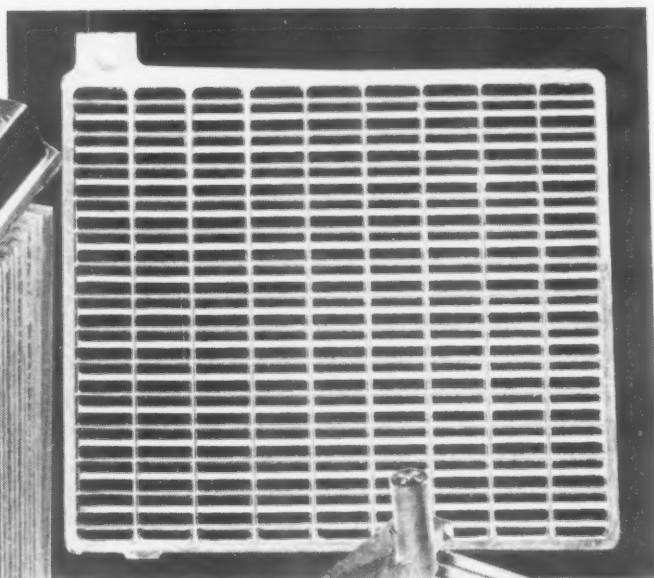
The extra care required by wooden station wagon bodies means more repair profit



Result of neglect—the finish gone, the joint pulls apart and rot begins.

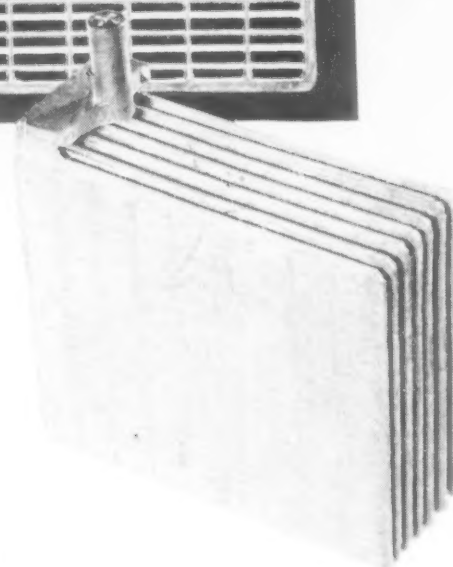


Left. Battery element with cover in place ready to be inserted in the battery case.



Upper right. Illustration of plate grid structure removed from case. Note intricate construction.

Lower right. Illustration shows battery plate group. Note positive terminal, plates and strap.



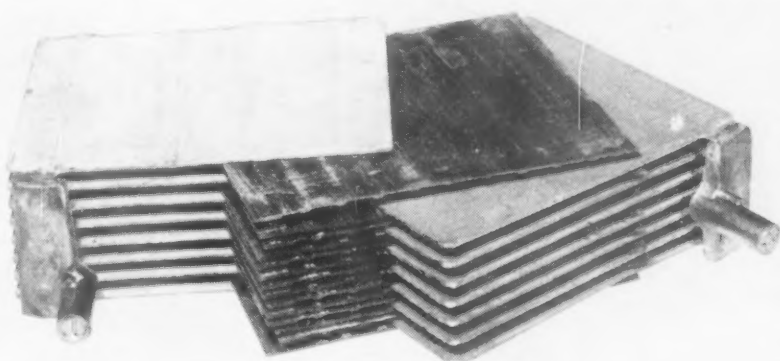
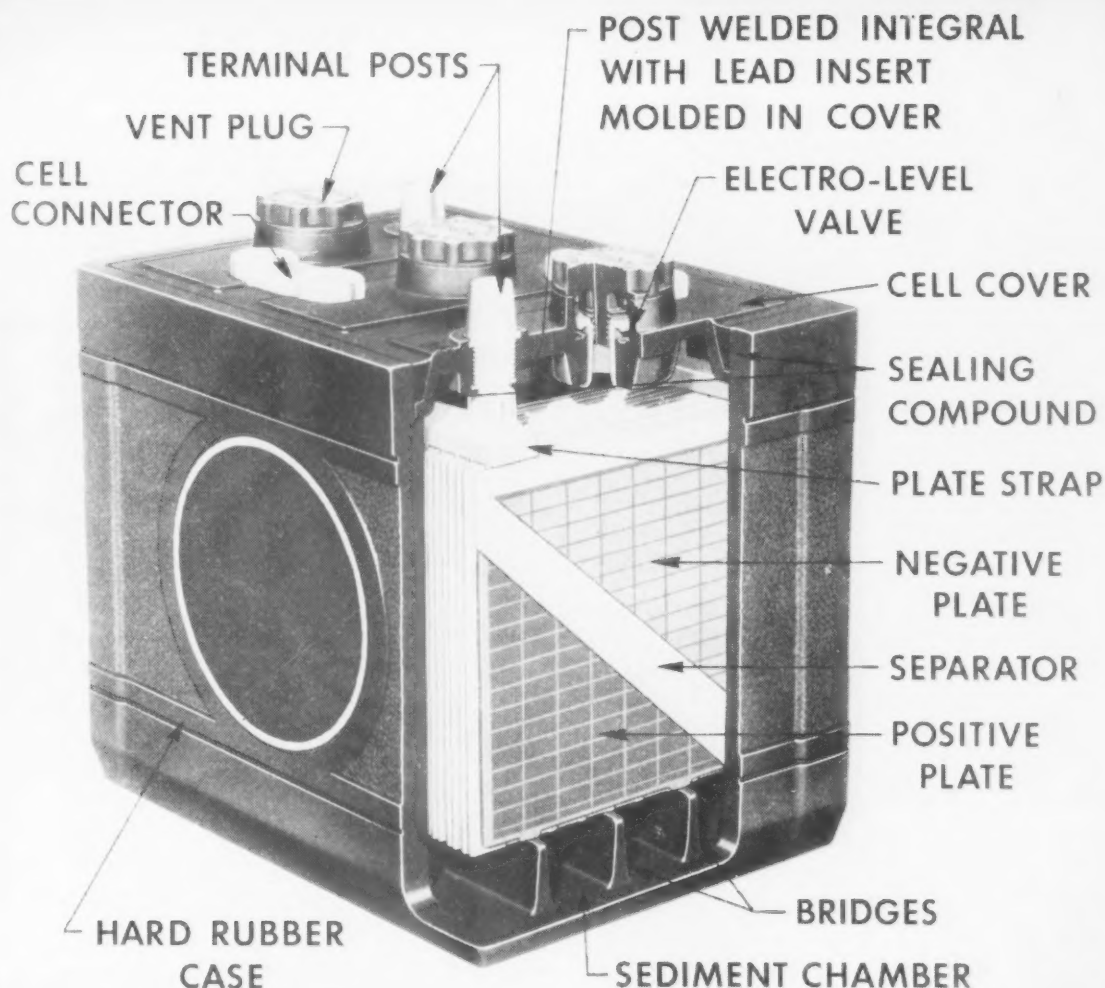
The BATTERY and How it Operates

**The construction of a battery and its chemical actions
are described this month by William H. Crouse**

BATTERY engineers use a jawbreaking word when they talk about batteries. They call them *electrochemical* devices. By this, they mean that chemical actions in the battery produce electricity (during discharge), and that pushing electrical current through the battery when charging causes chemical reactions in the battery that return it to a charged state. For all their real complexity, these chemical reactions are not hard to understand. However, before we discuss them, let us see how the battery is con-

structed, what these parts are that cause a reaction.

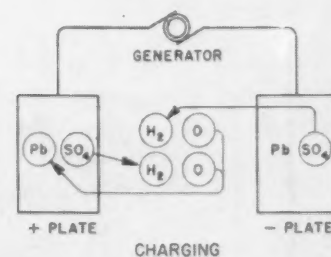
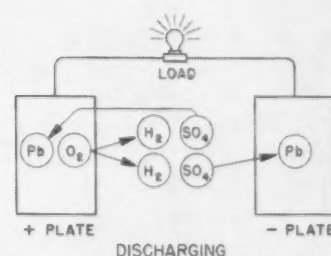
The automotive storage battery (*Fig. 1*) consists of three cells assembled into a case and each cell provides a voltage of two volts. As the cells are connected in series, the voltages add and there are thus 6 volts available at the two battery terminal posts. Trucks and buses often use 12-volt batteries which are made up of six cells connected in series and sometimes two 12-volt batteries are connected in series to provide 24 volts. Each cell contains a fluid called the electrolyte



Above. Typical auto type storage battery with one cell cut away to show internal construction.

Left. Lacing of positive and negative plate groups together with separators between.

Lower. Chemical actions in battery during charge and discharge.



and a collection of plates called an element. *Fig. 2* shows a complete battery element with the cover in place. In the final assembly, terminal posts and connector straps are welded or lead burned to the plate strap terminals.

The element is made up of two different types of plates, negative plates and positive plates. The plates are made by pressing lead oxide pastes into the plate grids (*Fig. 3*). The grids are lattice-like structures of lead alloy which support the lead oxide pastes which become the active materials when the battery is completed.

(Continued on page 90)



Installing a water carrier on a fleet truck serviced by an independent shop.

Contracts with large companies provide a large volume of steady work for these independents

By HARRIE H. BIERMAN

Fleet Maintenance Means Steady Profit

"IT'S nice work, if you can get it." And the song applies to fleet maintenance work according to Collins Garage, large "independent," at Miami, Fla.

The development of this branch of the general repair business by the shop began about eight years ago. One day the fleet superintendent of a utility company which operates on a state-wide basis handed R. C. Collins, the shop's owner, a sheet of truck upkeep figures. "I think our truck maintenance is costing us too much money," the fleet boss told him. "What's your opinion?"

Collins studied the figures carefully then handed back the sheet. "You're right. Your fleet upkeep is costing you too much. On the basis of straight time and material, we can save you money. Why not let us take care of your trucks?" So they worked out a schedule, and Collins Garage took over the maintenance of the utility's fleet of over 150 units. Right then, in Collins' mind an idea was born.

He was maintaining some truck fleets already which were too small for practical self-maintenance by their owners, but he had no account

An independent business built principally on fleet maintenance.

of this size. Utility companies are managed by capable people, he reasoned. If they couldn't afford to maintain their own vehicles, there were likely to be other large, and less-shrewdly-operated companies to whom keeping up their own fleets was a "luxury item." If this utility deal worked out satisfactorily for all concerned, sizable volume on this type of servicing might be built up.

At that time Collins was operating a combination storage and general repair business in a fairly large but antiquated building which he leased. Except for its location in the city's downtown area it did not fit into Collins' new plan. Therefore, after a year's experience in maintaining the utility fleet, he acquired nearby ground and had constructed a building carefully planned to suit his needs.

This building is of concrete-and-steel construction, 110 by 180 feet. The roof is steel-truss supported; thus all floor space is free of obstructing pillars. A balcony, 13 by 70 feet, along one side, provides storage space, which also helps to keep the floor clear. A

(Continued on page 71)



MOTOR AGE PICTURE GALLERY



Myrna Dell's prize sun-tan cost her a part in an RKO Radio film but won for her much admiration and a better role in another picture—as a South American beauty in Alfred Hitchcock's "Notorious".



Above. Bedside courses in motor mechanics for veterans convalescing in Army hospitals are the latest development of a new government reconditioning training program.



Right. The Mathis, a light new French three wheeler with front-wheel drive, seats three abreast in front and a fourth crosswise behind them. It gives 100 mpg at 45 mph.



Left. Nathan R. McManus, a Ford research engineer, checks a measuring device that tells how much air is passing through a motor crankcase. The recently developed equipment will aid in engine design.

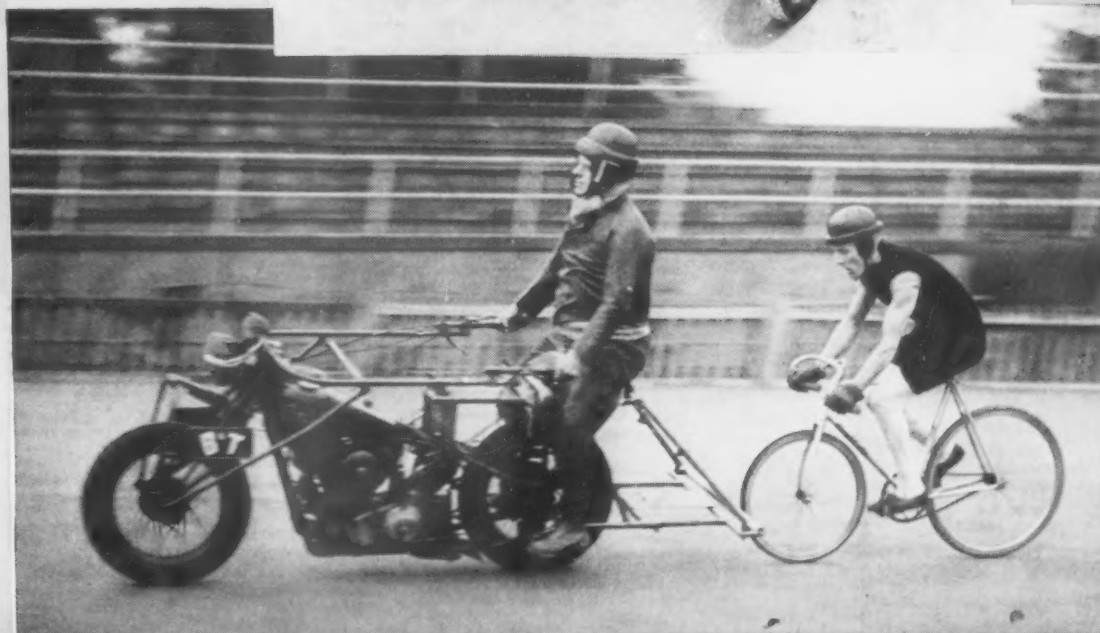


Above. Louis Unser, driving a Maserati on Pike's Peak Road September 2, 1946, where he won first place in the record time of 15 minutes 28.7 seconds. Out of eight starts, Unser has won seven times.

Right. Two lovely experts take the first of a fleet of twenty beach buggies for its shake-down cruise on the sands of Daytona Beach. The power is supplied by two six volt storage batteries.



Below. Harry Oxley's attempt to better the National Cyclists Union motor paced record of one hour 25 minutes 25 seconds for 50 miles failed after he had covered 25 miles in 43 minutes, because the motorcycle had engine trouble.







Larry Kreis serving coffee to six mechanics at the Boyd H. Gibbons Ford Shop.

No Cars—But Lots of Coffee

AT a cost for maintenance of about \$250 a month, Boyd H. Gibbons, Ford dealer, 640 Wall Street, Los Angeles, has opened its own coffee shop as its answer to the "coffee and— problem" now so prevalent, and growing largely out of defense plant concessions during the war.

While this additional overhead may appear to be impressive at first glance, it must be balanced against the gains to be properly appreciated. Until the advent of the coffee shop, employees were in the habit of taken ten-minute breaks," both in the morning and afternoon, to go outside the buildings to get their "coffee and."

These periods actually extended themselves into twenty- and thirty-minutes absences, due to the time necessary to walk to and from the shop to restaurants, and time spent in waiting for service. Now an employee—by actual check—averages 9½ minutes in the Gibbons coffee shop, getting as much of a pick-up and "break" as he formerly did in twice that time outside the buildings.

One early estimate sets the time saving as 13 hours per day for the

This dealer keeps his mechanics on their jobs by operating his own coffee shop in his establishment

by **HAROLD J. ASHE**

mechanics, alone. Now, however, Boyd H. Gibbons, Jr., believes that the saving evaluated in actual production time comes closer to one hour per day per man.

With a total staff of 105 employees—and considering that the coffee shop is also patronized in increasing numbers by customers—it is conservative to estimate the total operation cost at something less than \$2.00 per month per employee. From this cost, considering the man-hours saved, the coffee shop, even though it is not supposed to show a profit, nevertheless, does so, in fact.

"The coffee shop gives employees quiet surroundings in which to relax," explained Gibbons. "They may listen to the radio, or read the newspapers, and they get the best coffee that it is possible to serve them, together with doughnuts or cakes as a pick-up."

While Gibbons is a large dealership, he believes the same idea is adaptable to smaller dealerships as well on a somewhat more modest scale. However, he pointed out, a good many dealers who have tried the idea, seem to miss the main point. They furnish facilities, but

(Continued on page 99)

Here's your chance to pick up a little extra money. We'll pay five bucks (\$5.00) for every Shop Kink accepted and printed. So send 'em in to us—some short cut you use in doing a job easier and faster than the other fellow—some special tool you made when you couldn't buy one to do the job—and we'll do the rest. Incidentally we won't accept any that have previously appeared in any other automotive publication. Send 'em in!

SHOP

Shop Press

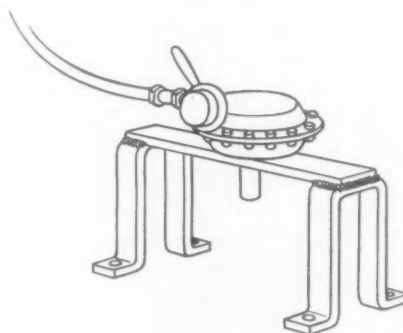
A new use for automotive air brake chambers has been developed by Westinghouse Electric and Mfg. Co. for their own plants and should prove of interest and use to repairmen. Essentially the idea is to use the brake chamber as the power source for a press in place of the normal gear and plunger. The result is a portable press of low cost and considerable power. Air brake chambers are used instead of brake cylinders because there is less chance of leakage, from wear, in the diaphragm unit.

It can be constructed by welding together a suitably strong "U" shaped bracket which is fastened to a table or bench. The chamber is mounted as illustrated. A simple rotary disk type valve is used to control the air pressure. Listed are some figures to give an idea of the amount of power available from this set-up using a 60-lb. pressure air supply.

Type of Brake Chamber	D	E	A	C	B	G	F
Effective area of diaphragm in Pounds force developed with 60 pounds air pressure.....	360	540	720	960	1440	1800	2160

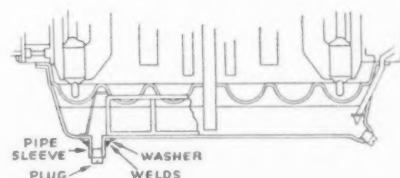
Ford Stay Bolts

When the floor boards on Fords are rusted in place it is very difficult to tighten the recessed head bolts of the engine stay bars without a special tool. We cut an inch square hole in the floor boards over the bolt head and reach through with a 5/16-in. square wrench. If the hole is cut out on three sides only the metal can be bent back to cover the hole.—*Dan Brunner, Leves-Saburn, Inc., Ford Dealers, Bala-Cynwyd, Pa.*



Crankcase Drain

On Hudson and Terraplane engines when operating conditions produce large quantities of sludge all of the sludge in the crankcase does not drain out with the oil. This can be remedied by installing another drain plug just forward of the front end of the inside screen. When the crankcase has been removed to clean out the sludge, bore



a hole at the selected spot and weld a pipe sleeve to the case using a large washer to stiffen the case which is of double thickness at this point. A plug can be readily screwed into the sleeve. Thereafter all the sludge can be drained out by simply removing the two plugs—*Theodore Dieckhaus, Jr., 109 West 5th St., Washington, Mo.*

Short Locator

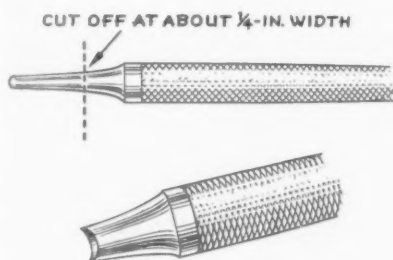
The Ford induction type ammeter makes a very good short locator. Cut the copper loop on the back. Hold the ammeter close to the suspected wire. Close the battery circuit momentarily, and the ammeter hand will move if it is against the shorted wire.—*Maurice Irwin, Irwin Garage, Noblesville R.R. No. 3, Noblesville, Ind.*

Kinks

\$5

Brake Spring Tool

A good long round rat-tailed type file makes an effective brake spring tool. Cut off the tail at the point where it is $\frac{1}{4}$ in. wide and grind a tapered groove in it as shown.



The file makes a good slip proof handle and the rounded tapered end will let the spring slide easily into place.—A. W. Berglund 116 Arrowhead Road, Duluth 3, Minn.

Tappet Adjusting Screws

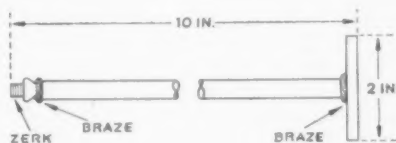
When valve lifter adjusting screws become worn or dished on their contact surface it is nearly impossible to get an accurate valve adjustment by the usual methods. The normal procedure is then to replace the lifter adjusting screw and reface the end of the valve stem.

Here is how to get an absolutely accurate adjustment without replacing the screw or refacing the valve stem. Clamp an indicator to the edge of the valve chamber so that the right-angle finger of the

indicator contacts the lifter (the top edge of the locknut makes a nice flat space). Moving the lifter up and down by hand will cause the indicator to show the actual tappet clearance. Now adjust the tappet until the correct clearance is shown. This method will give to a dished tappet a more accurate adjustment than could be given a new one on a flat ended valve using a feeler gage.—Louis Rivello, Community Service Stations, 1845 E. Cornwall St., Phila., Pa.

Shackle Pin Puller

Here is a tool for removing the rear spring rear shackle pins in Chevrolet $1\frac{1}{2}$ ton trucks. The rear pins cannot be driven out because of the frame and when they are worn or gummed up, they are difficult to remove with pliers, vise grips, etc.



Grind the ball off a zerk fitting and braze it to a $\frac{1}{4}$ in. rod, 10 in. long with 2 in. piece brazed on the other end. This tool can be used with pliers and hammer to jerk out the pins.—Bob Scudder, Chittwood Motor Co., 530-532 Ouachita Avenue, Hot Springs, Arkansas.

Rusted Glass Channels

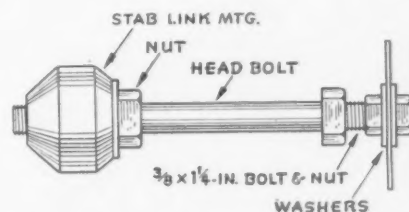
When installing glass in old cars, it is often found that the glass channel is so badly rusted that it will not hold the glass. A new channel may not be available.

Give the channel and the glass a coat of weather stripping cement and the glass will stay put.—L. J. Ormer, Bendersville Garage, Bendersville, Pa.

Valve Tester

Recently, when I wanted to know if a burnt valve or a bad plug was causing a miss, I took a Plymouth head bolt (with the threaded hole in the head), some washers, and a couple of nuts, a $\frac{3}{8}$ by $1\frac{1}{4}$ bolt and a rubber mounting from a stabilizer bar link and made this inexpensive tester.

By holding the rubber end firmly over the spark plug hole and working the starter by hand, I can



check the valves by the compression developed. If a sharper point on the rubber is desired, it may be honed down on an emery wheel.—Frank W. Kerr, 400 Transit St., Bay City, Michigan.



One of the 60 1946 French Renaults which arrived here recently for distribution among American buyers. Capable of 70 mph., the cars are four-door, five-passenger black sedans with a 92 1/2-inch wheelbase. According to OPA, they will sell for \$1350.

Automotive Advertisers Council Convenes

Plans for an annual award to Automotive Wholesalers for outstanding advertising activity and for the publishing of a Guide Book on Customer Meetings were formulated by the Automotive Advertisers Council at its fall meeting held at the Drake Hotel, Chicago, Sept. 16-18.

The Council is composed of advertising and sales executives of leading manufacturers of automotive parts, equipment and supplies selling in the automotive after-market.

An informal poll of members taken at the meeting showed that a large majority of the members anticipated a continued high level of service business next year.

At the session, the final draft of the "Guide Book to More Profitable Customer Meetings" was presented to the membership by Walter Kirkpatrick, manager, advertising and sales promotion, Wilkening Mfg. Co., who heads the Council's "Task Force" on this project. Other members of the "Task Force" who directed the preparations of the book

are R. E. Conley, advertising manager, R. M. Hollingshead Corp., Whiz Automotive Division; J. F. Apsey, Jr., advertising manager, Black & Decker Mfg. Co.; Burt Hotvedt, sales promotion manager, Blackhawk Mfg. Co.

The Guide Book has been in
(Continued on page 102)

One Million Orders

Orders for 1,002,840 Kaiser Special and Frazer automobiles have been received by Kaiser-Frazer Corp. and Graham-Paige Motors from the companies' nationwide network of 4472 distributors and dealers, according to Joseph W. Frazer, president.

Mr. Frazer stated that all distributors and dealers had completed financing and credit arrangements to take up these orders. A substantial portion of the orders also are backed up by customer deposits of from \$100 to \$300 each, he said.

Since prices for the two models have not yet been fixed by the Office of Price Administration, he pointed out, no dollar value of the total sales can be estimated at this time.

Adequate Rubber Supply

The nation's supply of rubber—synthetic and natural—now appears adequate to maintain the present record rate of production for the remainder of 1946, John L. Collyer, president of B. F. Goodrich, said recently.

During the first six months of 1946, rubber manufacturing operations were 40 per cent higher than for any pre-war year, and doubt had been expressed that our supply of rubber would permit continued operation at the present rate.

The estimated consumption of rubber in this country for this year is 1,000,000 tons, over 70 per cent of which will be synthetic. Sometime in 1947 there should be enough natural rubber to permit competition with the synthetic product once again on the basis of merit.

New Handling Charges

National Automobile Dealers Assn. is continuing its efforts to have OPA adopt again the 5 per cent handling charge as originally allowed in 1942. The August orders to comply with the Crawford Amendment were completed and ready for release, incorporating the per cent charge, but before the orders were released protests by some manufacturers caused OPA to change to an individual pricing method.

Where it had been the custom in 1940 to invoice a car at a total delivered price, the handling charges can be determined by deducting from the delivered price the factory list price, freight, excise tax and the price of extra and optional equipment not included in the factory list price. The difference will represent the handling and delivery charge, but a dealer's book of records will have to substantiate the charge.

OCTOBER, 1946

a b c d

New Used Car Dealer Association Formed

Representatives of used car dealers throughout the country met in Chicago, Sept. 24, to organize the National Used Car Dealers Association. At an initial meeting held in Detroit in August and attended by 200 dealers, the ground work was laid and a temporary executive committee appointed to work out procedures.

Decontrol of used cars is the first major objective of the group, but the organization also is being formed as a permanent association to further the interests of the used car dealers. Present thinking is that late model used cars should remain under control to prevent a buyer from purchasing a new car at ceiling price and then later selling it at a higher figure. One speaker stated that there are two used car dealers for every new car outlet, and that for every new car sold, 3½ used cars are moved.

General Motors Improves Weekly Production

Automobile production in General Motors regained a good portion of the momentum lost in the shortened week after Labor Day as it reached a total of 23,345 passenger cars in the United States last week. The GM output in the U. S. last week, however, was some 2000 units short of the pre-Labor Day week when 25,460 cars were produced.

Total passenger car production by General Motors in the U. S. this year, to date, is 384,250 compared with 1,397,849 for the same period in 1941.

Truck production remained below weekly levels for this period, with 8162 units turned out. This was primarily due to a virtual shut-



A few minutes after a multiple smashup at Lakewood Park, Atlanta, Ga., Sept. 2, George Robson, winner of the 1946 Indianapolis classic, was killed in the car at left, and George Barringer was killed in the car at right.

down by the GMC Truck and Coach Division, caused by a critical shortage of cab sheet steel.

There was little change from the week before in so far as supplier strikes affecting General Motors operations were concerned. The report showed 58 such stoppages in the United States and Canada compared to 57 the previous week. Forty of these were in the United States.

Thirty of these strikes have been in effect for more than 60 days; 21 from 16 to 60 days; and 7 from one to 15 days.

Of the 58 strikes, the UAW-CIO is involved in 16; other CIO affiliated unions in 32, and the AFL and independent unions in the remainder.

	Jan. 1 to Sept. 14, 1946	Jan. 1 to Sept. 13, 1941
Chevrolet		
Passenger	186,176	716,591
Truck	156,915	226,437
Pontiac	61,321	217,891
Oldsmobile	51,243	176,733
Buick	71,952	240,350
Cadillac	13,558	46,284
GMC Truck & Coach		
Trucks	16,014	76,972
Coaches	1,391	1,534
G. M. of Canada	27,531	81,222
TOTAL U. S. AND CANADA	586,101	1,784,015

WAA Speeds Procedure For Auto Parts Sale

War Assets Administration recently called on regional directors to take "drastic measures" to dispose of the "huge inventory of automotive parts, accessories and assemblies" \$271,000,000 at manufacturer's list prices and at the same time announced new procedures for allocation of such parts.

The new procedures were introduced to secure a wider and more fair distribution of auto parts, accessories and assemblies and insure that priority claimants' orders will be satisfied.

The procedures provide that the entire current property list of the National Automotive Parts Office be subject to requirements of priority claimants instead of the former 10 per cent set aside.

All orders for auto parts, accessories and assemblies received under WAA Program No. 40 shall be held for two calendar weeks immediately following the issuance of the monthly NAPO property list and the supplementary list. At the

(Continued on page 104)



CLEARING HOUSE

FOR SERVICEMEN'S QUERIES

Bill Toboldt, Editor, Motor Age

Hard Starting

I should like to know if you can tell me what could be wrong with a 1933 PC Plymouth car that is very hard to start on cold mornings. The extraordinary part about it is that a very short push will start the car.

The usual things have been done. Battery is new and has full charge. Battery ground is new and tight. Battery cable is good and connections have been checked. Starter has been checked, has new springs and brushes, and I can find nothing wrong with it. Seems to run O. K. I have installed new plugs, coil, distributor cap, rotor and condenser. Engine is in perfect time. Compression is good. Oil is light and clean.

This leaves the possibility that

there was a short in the starter somewhere and all of the current is going there and none is left for the points. But the ammeter swings back and forth as the points open and close, proving that the points, a new set, are getting current. In other words, the engine absolutely refuses to start unless cranked fast, which, of course, is about impossible on a cold morning regardless of the battery or starter condition.

I have tried different carburetors without correcting condition. I have also tried different gasoline pumps.

Car recently made a 250-mile trip and never used a single drop of oil and behaved like a brand-new engine. Engine has a very slow

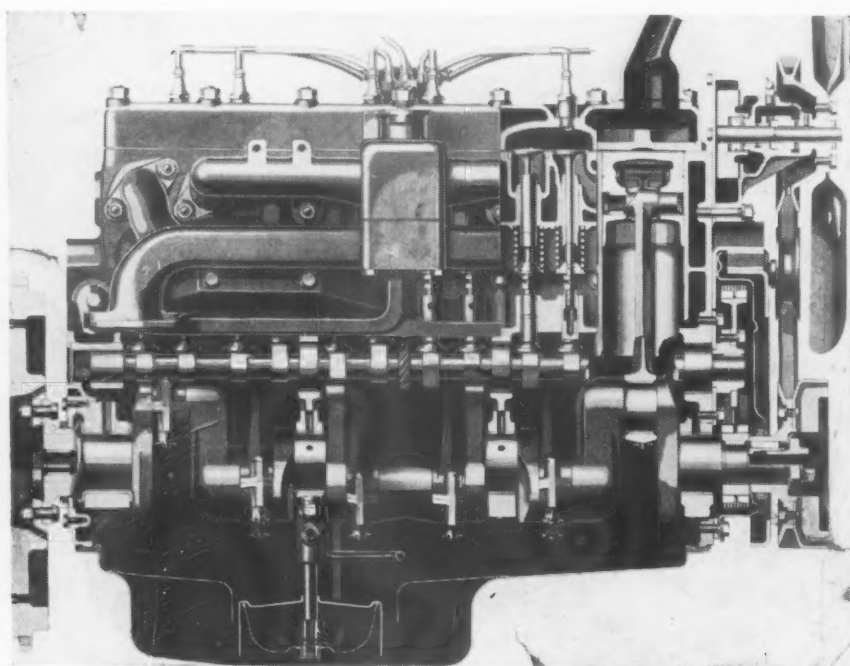
idle, and sounds good. Of course, we have overlooked something. But what might it be?—An Illinois Subscriber.

ONE point you did not mention checking on that 1933 Plymouth, which is so hard to start, is the engine ground. I note you say the battery ground is new and tight but, in these engines which are mounted in rubber a separate ground is provided. It is, of course, necessary that this be in good electrical condition also.

There is another point, and that is the rings. You state that the compression is good in all cylinders and that no oil is used. I wonder if these rings are so new and the tension of the rings so great that there is not enough current to supply both ignition and starter. If that is the case, the only thing you can do is install a different make of ring which has less tension.

I note you say that the oil is light. Considering the temperatures around Chicago, the heaviest I would recommend is SAE 10 and, since you are having trouble starting, this might be diluted with some break-in oil to make it still thinner, reduce friction, etc. I think you might also close in the spark plug gap to about .020 in.

In regard to the battery, is it possible that the battery has insufficient capacity for the job? Why not try a 19-plate battery and see what happens. As you know, cold-weather starting puts a mighty heavy load on the battery and it



frequently happens, while you can crank the engine, there is insufficient voltage to operate the coil.

In conclusion, I think your trouble is most likely caused by a defective engine ground, oil too heavy, or a battery of insufficient capacity.

Better Gas Mileage

I have been having trouble with getting proper gas mileage on a 1940 Plymouth. On a cross-country trip this car averaged 12.5 miles per gallon. On local trips it makes between 8 and 10 miles per gallon.

This car has a Tillston carburetor that was given a road test with a device holding a gallon of gas mounted on the dash like used to demonstrate gas mileage of new cars—and it traveled 17 miles under same conditions that ordinarily gives 10.

A new fuel pump was installed and the pressure reduced to 3 lb., but this did not help.

When this car had less than 20,000 miles it averaged 18 to 21 miles per gallon. I will be grateful if you can give me some advice.—Earl W. Horne, Buffalo Mills, Pa.

THE first thing I would suggest doing on your 1940 Plymouth in order to improve the gasoline mileage is give it a thorough tune-up, and that includes a complete carbon and valve job. It might also even include new rings in order to restore compression. Compression on this car should be 114 lb. with the standard head and 119 lb. with the high compression head. After you are sure compression is within at least 5 lb. of standard, then you can install a rebuild or a new carburetor so as to be absolutely sure that all the jets are standard size and that none of them is worn as the result of extensive service.

I would also recommend a careful check of the ignition distributor. Pay particular attention to the automatic advance, for after some years of service the springs of the centrifugal advance frequently lose their tension. Consequently the correct advance is not obtained at the higher road speeds. Also make sure that the vacuum advance is functioning correctly.

I would like to point out, however, that the wide spread between the mileage obtained on your special test run and that obtained by normal driving, suggest that your particular type of driving is more than usually wasteful of gasoline.

Motor Vibration

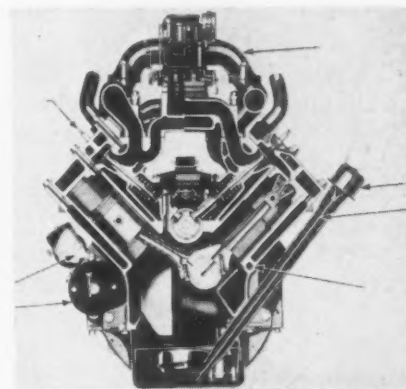
We have a '36-60 Cadillac Coupe on which the following work has been performed. New motor mounts, rings, new mains and rods, timing chain, new clutch, pressure plate and disc, valves ground, new lifters, a complete overhaul job.

After this work was done the motor vibrates so bad when running between 38 and 40 miles per hour that the car is not usable.

He has had it back several times to the shop where the work was done but with no results. So far I have done nothing on the car. What do you think the trouble is?—A. D. Powell, 201 W. Carillo St., Santa Barbara, Calif.

FROM the description you have given of the trouble you are experiencing with a 1936 Cadillac, it would seem that there is a strong possibility the vibration is caused by an unbalanced condition of the clutch. In this connection I sug-

gest that you try running the engine out of gear to see if you obtain the vibration when the car is standing still. If the vibration is not present, obviously the difficulty is in the clutch or drive line. Prob-



ably the easiest way to overcome it would be to install a new and properly balanced clutch or a new propeller shaft, if that is the difficulty. Naturally, these should first be checked between centers on a lathe to be sure they are in balance.

If the vibration is noticeable with the engine running and the car standing still, the trouble is undoubtedly in the engine. If the original pistons and bearings are being used, it is difficult to say what could be causing your trouble. If any new pistons and rods were



"Scalpel . . . Sponge . . . Baling Wire!"

installed, these should be checked against the original equipment units to see if they are of different weight.

I suggest also that you check the balance of the front and rear wheels, for if these are out of balance it will result in severe vibration when the car is in motion.

I think it would also be worthwhile to check the fan belts on this car, for there have been many instances where a badly worn fan belt set up a vibration similar to the one you describe.

There are two bolts on counterweights on the crankshaft and if either one or both were removed and not replaced, severe vibration would result.

Oil and Water

I have some trouble on a 1939 Chevrolet that I would like advice on. First of all, it uses a lot of oil and, after fast acceleration, the water in the cooling system sounds as though it were boiling but the temperature doesn't go over 165 degrees. New head gasket has been installed for the second time. Water pump was rebuilt, as we thought that it might have been sucking air. Cooling system has been thoroughly cleaned, all to no avail. Could it be that there is a slight crack somewhere in the cylinder head which cannot be detected and through which compression escapes into cooling system and yet not large enough to enable water to leak into cylinders?

I soldered an inner-tube valve into my compression gage adapter, tried to pump cylinders full of compressed air to see if there would be air coming out through cooling system. This didn't prove effective, as air turns the motor over, causing valves to open and air to escape. Any advice you can give will be greatly appreciated.—An Illinois Subscriber.

IN regard to the boiling noise you hear in the cooling system, I suggest that you install a large diameter glass tube in the upper radiator hose so that you can observe the water as it is being pumped from the engine into the radiator. If you have a compression leak, you

will see gas bubbles and smoke in the water. If you are unable to obtain such a glass tube, you can make the same test by filling the radiator completely full and then observing the surface of the water by removing the radiator cap.

As you point out, it might be the result of a crack in the cylinder head or block, but I would also like to point out that it might be caused by a warped cylinder head or warped cylinder block. Then the installation of a new cylinder head gasket would not eliminate your trouble. Therefore, I would recommend that you check the top surface of the cylinder block and the surface of the cylinder head with a straight edge to see whether they are warped.

There is a possibility that this boiling noise is related to your high oil consumption. If your cooling system is clogged in some way, so that you have some localized spots which would become extremely hot, it would result in extreme cylinder distortion and consequently high oil consumption. I would therefore recommend that you thoroughly clean out the engine water jacket with a strong cleaning solution.

Setting Durant Tappets

There are no marks on the flywheel of this 1925 model Durant motor. How far should the tappet be seated?—Daniel J. Orger, Gladstone, N. Dak.

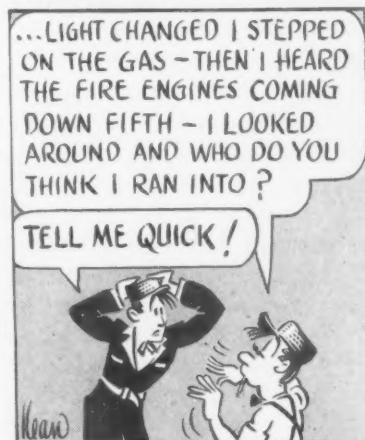
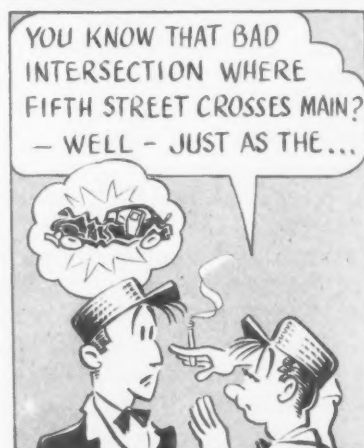
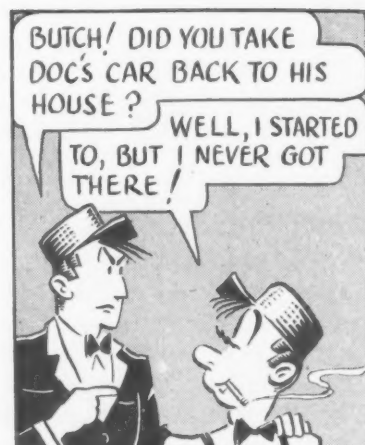
ON your 1925 Durant, both the intake and exhaust tappet should be set at .006 in. with the engine hot. Intake valves open 4 degrees after top center. Spark timing varies with the different models but this can best be set so as to obtain the best performance.

Fuel Trouble at Fifty

We have on our shop a 1940 LaSalle, Model 52, which cuts out when you speed it up to about 50 m.p.h. for the first five miles and then it dies out as if it had run out of gas. If you let up on the gas for a few minutes it seems to start to run again. When this happens, the car starts to hit on about five

(Continued on page 48)

BUTCH . . .



This is a Studebaker year

in motor trucks, too

Registrations now at
an all-time high!



Studebaker is **5th** in output
of half-ton and larger capacity trucks

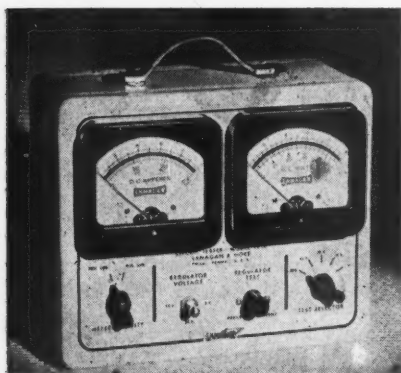
**THAT MEANS EXTRA BUSINESS AND EXTRA
PROFITS FOR STUDEBAKER DEALERS**



NEW PRODUCTS

New Circuit Tester

Lanagan and Hoke, 431 East Collom St., Phila. 44, Pa., have developed a new portable circuit tester. Known as Model 125 E, the new device is designed for testing generators, regulators, and relays in the car.



It is equipped with fixed nichrome resistors for setting 6, 12, and 14 volt systems without the battery in the circuit. The voltmeter is equipped with four scales and the ammeter with three scales. Switches are provided to take care of the polarity of the meters.

Rebuilding Equipment

The Sperry Gyroscope Co. through its subsidiary The Waterbury Tool Division of Vickers, Inc., has acquired the rights to the manufacture and sale of the line of automotive rebuilding equipment made by the Simplicity Manufacturing Co., of Port Huron, Wisconsin.

The line will be called the "Waterbury-Simplicity" line of motor rebuilding equipment. It includes a piston turning and grinding machine, a cylinder reborer and grinder, and an in-line-bearing borer. Also available is a rebabbiting jig and a connecting rod boring machine.

Further information may be obtained by writing the Waterbury

Tool Div., of Vickers Inc., Waterbury 91, Conn.

Watervliet High-Speed Vibrator Announced

With a Watervliet High-speed Vibrator you can do a perfect job of smoothing auto fenders, doors, panels, cowls, trunks, hoods, turret tops, tire covers, radiator shells, lamps, etc. according to the Watervliet Tool Co., Inc., Albany, N. Y. It is said to service the thinnest metal as well as the thickest on autos, busses and trucks requiring less time and effort and giving a smoother and more finished job.

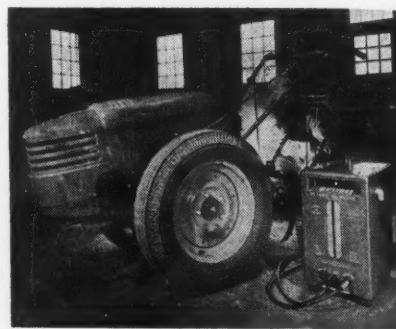
Other features of this pneumatic tool are a "toggle loop" that locks the tool on the work and keeps it from bouncing and stretching the



metal; blow control that permits fine control of the power and speed of the gun; a speed of 10,000 vibrations a minute; a muffled air exhaust that reduces noise; and such time-saving accessories as a power chisel for cutting panels, tops, etc., and a goo scraper. Weighing only 11½ lb., the tool has a valveless air hammer. Especially designed floating dollies automatically follow the contours of the work.

New Electric Welding Unit

Wilson Welder and Metals Co., Inc., 60 East 42nd St., New York 17, N. Y., is now making a limited input electric welding unit, called the "Busy Bee Transformer Welder." This new unit which is being distributed by the Air Reduc-



tion Sales Co., is especially designed for use in rural areas and meets the requirements of REA operating bulletin No. 10. It uses 230 volt, 60 cycle, single phase current, and is available in 130 amp or 180 amp models.

Easy to operate, the welder is equipped with an electrode size gauge and an indicator marked in electrode sizes instead of amperes. The Busy Bee is entirely self contained, built of steel with all windings covered with spun-glass fiber insulation. Protection against overloads is obtained by a circuit breaker built into the "on" and "off" switch. It is furnished ready to operate with a complete set of accessories.

Water Removal Chemical Mixture

The Dacar Chemical Co., Pittsburgh, Pa., has developed a chemical mixture that is said to remove water from the gasoline tank and fuel system of automobiles. The product is being marketed under

(Continued on page 110)

A Perfect Job

WITH THE

TRUCUT

Armature Lathe & Undercutter

THE TRUCUT Armature Lathe does a perfect job of machining and under-cutting commutators, quickly and easily, by anyone, with or without machine shop experience. TRUCUT is built specially for armature work, and like all specialized machines, does the work better.

TRUCUT, weighing only 55 lbs., does a truly fine precision job, without extra expensive attachments. Occupies little bench space, only 14 x 19 inches, and is readily moved from place to place.

No need to fill up your shop with unwieldy, space consuming equipment for truing armatures, when the compact and economical TRUCUT Armature Lathe does the job better.



Also
TRUCUT Tailstock Rest
General Purpose Press
and
TRUCUT Mica Undercutter

Sold only through jobbers by

FRANK N. WOOD CO.

TRUCUT

Armature Lathe & Undercutter

342 W. MAIN STREET WAUKESHA, WIS., U. S. A.

PACIFIC COAST ADDRESS: 1340 S. FLOWER ST
LOS ANGELES 15, CALIF.



CANADIAN REPRESENTATIVE: W. H. COOPER & CO.
1103 YONGE ST. TORONTO 5, ONTARIO, CANADA

OCTOBER, 1946

When writing to advertisers please mention Motor Age



(CLEARING HOUSE

**FOR SERVICEMEN'S
QUESTS**

(Continued from page 44)
cylinders until it gradually hits on
all eight.

We have changed the fuel pump,
have rebuilt the carburetor, also
the distributor and the flexible line

WOULD YOU BELIEVE IT?
This shop has an inventory
of 30,000 PARTS
to draw from!

No matter what the proprietor of this shop
needs, he can get it in a hurry!

His Independent Automotive Wholesaler —
a member of M.E.W.A. — carries an average
inventory, parts and merchandise, over
30,000 different items. And, because of
quick availability, the customer's inventory
is just as big as the wholesaler's inventory.

We M.E.W.A. wholesalers carry these large
inventories to help you do big business with
a small investment.

Use this inventory advantage. Ask the
nearest M.E.W.A. wholesaler about this
and other services he offers for your con-
venience and profit.

Our business is to make it easier for you
to run your business.

Let's do Business together!

Your Wholesaler

MEWA

MOTOR AND EQUIPMENT WHOLESALE ASSOCIATION
309 WEST JACKSON BOULEVARD, CHICAGO 6, ILLINOIS

SEVEN STEPS to Servicing SUCCESS

Your M.E.W.A.
Wholesaler Provides:

1. Parts, equipment and supplies
you want when you want 'em
2. Precision machine shop service
3. Terms to fit your needs
4. Deliveries to speed your service
5. Freedom of choice of famous
brands
6. Prestige of national brands free
from tie-in agreements
7. Experienced business, mer-
chandising and mechanical
know-how

that runs from the gas line to the
fuel pump, but this doesn't seem to
make any difference. We have
changed to different kinds of plugs
and also have ground the valves
and cleaned carbon.

Would it help if we changed to
a larger plug? Do you think the
trouble would like in the gas tank?
Otherwise this car runs perfect at
any speed up to 40 m.p.h.—A New
Jersey Subscriber.

FROM the description you have
given of the trouble you are ex-
periencing with a 1940 LaSalle, it
certainly sounds as though you are
getting insufficient fuel to the en-
gine. I note you have replaced the
fuel pump and the flexible line. I
suggest in addition that you thor-
oughly blow out the fuel line from
the pump to the tank. I also sug-
gest that you check the fuel tank
cap. If there is not enough air
leakage into the tank, it would re-
sult in insufficient fuel reaching the
carburetor. You might try operat-
ing the car with the fuel tank cap
removed as a test, to see if that
would eliminate the trouble.

I also suggest that you try some
different brand of gasoline, as pos-
sibly the gas you are using has
such a low octane rating that it in
turn results in detonation and plug
trouble.

Oil to Rocker Arms

I have a car which I overhauled,
installing new mains, rods and
rings. Also put on a new oil pump.
(Continued on page 108)

**"Hit one over the fence and I'll let you
get it yourself."**

A Proved Money-Maker



*Eye-Catching
Fast Selling
Displays*

GENUINE *Graphitoid*
Lub-a-Spray
Reg. U.S. Pat. Off.

in the clean, convenient
NEW PUFFER PACK



Automotive stores and service stations all over the country have found Lub-a-Spray an unusually fast, profitable seller. It's a natural for every car owner, because it's the most effective and easiest method of effective graphitoid lubrication that is greaseless, dustless, waterproof. One squeeze of the handy puffer pack and a fine graphitoid spray is air-floated into window mechanisms, door locks, hinges, windshield wipers, etc. It assures long-lasting lubrication in all hard-to-get-at places--lubrication that is not affected by moisture, cold or water. That's why it has thousands of uses--and millions of users. Stock Lub-a-Spray now--order from your jobber today.

PANEF MANUFACTURING CO.
MILWAUKEE 1, WISCONSIN

Producers of exclusive, patented merchandise for hardware, automotive, sporting goods fields--sold only through jobbers.

AAA NATIONAL DRIVER'S POINT STANDING

Position	Driver	Address	Total Points
1	Ted Horn	Paterson, N. J.	1,762
2	Emil Andres	Chicago, Ill.	808
3	Bill Holland	Bridgeport, Conn.	801
4	Jimmy Jackson	Indianapolis, Ind.	800
5	T. Hinnerstiz	Reading, Penna.	639
6	Joie Chitwood	Reading, Penna.	583
7	Walt Ader	Bernardsville, N. J.	574
8	Louis Durant	Burbank, Calif.	400
9	Gigi Villosi	Italy	300
10	J. Shackelford	Dayton, Ohio	260
11	Frank Wearne	Pasadena, Calif.	250
12	Henry Rogers	Paterson, N. J.	222
13	Rex Mays	Long Beach, Calif.	250
14	E. Zimmerman	Franklin Square, N. Y.	205
15	Bill Sheffler	Los Angeles, Calif.	200

OPA Cracks Down

(Continued from page 21)

O.P.A., and for the elimination of ceiling prices on automobile and automobile service, car dealers should make every effort to avoid even the appearance of trespassing on the rules and regulations as set forth by the O.P.A.

Every infringement will only tend to perpetuate the act and every evasion will endanger the good reputation of legitimate dealers.

Nash Settles Strike

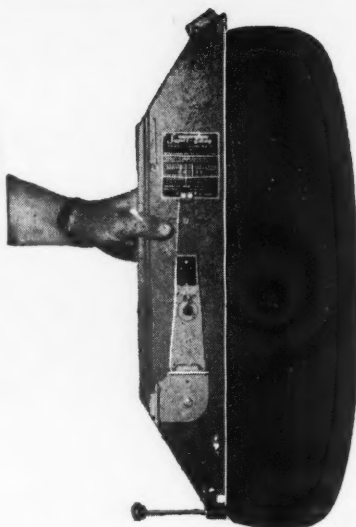
Nash Motors has resumed production of both low and medium-priced cars today, following settlement of a dispute occasioned by a request that more Nash automobiles be set aside for employee purchase. Employees yesterday accepted the company proposal to make available to workers of its Milwaukee body plant 17 cars each week.

The proposal "is conditional," said R. A. DeVlieg, Nash-Kelvinator vice-president in charge of manufacturing, "on the maintenance of manufacturing schedules at or above 500 cars daily."

The dispute occurred at the Nash body plant which closed after body employees refused to work on the small percentage of cars intended for export.



**THE ONLY GAGE
WITH A
BUILT-IN
FLOOR SLOPE
COMPENSATOR**



LOW-PRICED!

Handiest camber-caster gage ever invented. Designed for the mechanic who wants a simple, inexpensive device for doing the job quickly and accurately.

The only gage that has a built-in floor slope compensator. (Patented.) Once the gage is set to the floor slope, the slope is automatically compensated for in all readings.

**Does the Job
In 1/3 the Time**

*Write for
Literature*

MICRO-LINOR SERVICE CORP'N

1623 W. Fort St.

Detroit 16, Mich.

FOUR MICRO-LINER "FIRSTS"

- Dynamic Toe Gage
- "One-Man" Toe-In Gage
- Super-Easy Camber-Caster Gage
- "Shock-Seal" Shock Absorber Repair Set



SELL BETTER PERFORMANCE

In fidelity of tone, selectivity and power, the new Delco radios will delight your most hard-to-please prospects.

SELL BETTER APPEARANCE

Today's style-conscious buyers will go for the new cabinet work, the new styling and materials in the new Delco line.

Sell ALL 4 with the New Delco Radio Line

SELL GREATER DEPENDABILITY

Delco engineering and manufacturing methods insure you against inferior workmanship and dissatisfied customers.

SELL A TRUSTED NAME


"Delco" has a friendly and familiar ring to people everywhere. And the new Delco radio line lives up to the finest traditions of this old and trusted name.

MODEL R-1234—Plastic, Ivory Finish. A.C.-D.C. Also available in Plastic, Mahogany Finish, Model R-1235.



Forerunners of a Complete Home Line

The model illustrated is one of Delco's four new table models. Soon they will be followed by consoles, combinations, portables and F-M models. In this complete line, you'll find the best of all that's new in radio — backed by Delco's experience as manufacturer of original-equipment radios for General Motors cars and leading supplier of military radios and electronic equipment.

ENGINEERING VISION  MANUFACTURING PRECISION

DELCO RADIO—A UNITED MOTORS LINE



Delco home and auto radios are distributed nationally by United Motors Service distributors.

Delco Radio
DIVISION OF
GENERAL MOTORS

Hollingshead Plane Aids Sales Training Program



Delivery of a new, specially equipped DC-3C 18-passenger transport plane to the R. M. Hollingshead Corporation of Camden, N. J., has permitted an ambitious development of a jobber salesman training program. It is believed to be the only plane in the country being used exclusively for such a program.

Realizing that first hand observation of manufacturing and laboratory methods was important in the effective selling of their line, Hollingshead undertook such a program some years ago. Jobber executives and salesmen were invited to the Company's plant in Camden for two or three day visits during which they saw the products made, saw the elaborate laboratory control methods that are used, and learned important details about the use of WHIZ products and merchandising campaigns.

The program produced notable results but was limited by the long travel time involved for mid-western jobber organizations. Many of them could not be away from their territories for the time required.

Delivery of the new 18-passenger Douglas plane has overcome this problem. A schedule has been set up providing for two round-trip flights each week. In the next 12 months, 1800 men from 100 jobber organizations will be flown to Camden for the intensive sales training course then returned to their

homes. The first group to visit the Hollingshead plant on this new schedule were 18 members of the Automobile Equipment Co. of Detroit.

Typical Operating and Merchandising Ratios for Auto Repair Shops

Profit and Loss Statement in Percentage of Sales Made

Net sales	100.000
Cost of goods sold	51.100
Salaries, owners	14.900
Salaries, others	15.900
Occupancy expense (61% of firms rented)	6.800
Advertising	.800
Losses due to bad debts	1.000
Delivery expense	.002
Installing accessories	.004
Company car expense	.833
Stationery, etc.	.200
Shop supplies and tools	4.501
Traveling and entertainment	.131
Subscription, dues, etc.	.027
Legal and auditing	.016
Telephone and telegraph	.038
Postage	.025
Taxes other than income	.328
Insurance	.415
Heat, light and power	.474
Miscellaneous expense	.406
Total direct expense	46.800
Total cost of doing business	97.900
Net Profit	2.100
Gross Profit	48.900
Mark-up as a per cent of cost	95.800

Is that all we sold?
This covers discounted parts, access, etc.
Never be rich at this rate.
I wonder if sister can type?
Hurray for the O.P.A.
They say it pays.
Might also be "cost of experience."
Dam Mrs. Ritzy.
So easy to put on, Hunh.
Who went to the beach in the truck?
Somebody is writing a book.
Someone ate up all the grease.
Where and who??
Motor Age and the Boy Scouts.
This guy saved me money.
Be getting parts from India next.
We don't seem to write much.
Maybe death would be better.
Let her fall, I'm covered.
Woolen undies for ALL.
This figure hides a lot of sin.
A sad tale is told herewith.
We will now economize, but where?
'Taint much Magee.
Where did it all go?
Some guys charge 112.500 of cost, am I a sap or more honest?

If you sell supplies the inventory should turn over four times a year.

Your Batting Average

(Continued from page 24)

gross profit resulting from the increased sales volume. These unprofitable items can only be determined by a careful customer and commodity cost analysis a little like getting a temperamental player psychoanalyzed.

The Superintendent of Documents, U. S. Govt. Printing Office, Washington 25, D. C., has available at small cost some easy to read booklets on the subject.

The table of percentages of sales that is included with this article is based on data published by The Automobile Dealers Association in 1939. They, of course, were looking at things with the eye of a new car dealer. Nonetheless, these figures are the only ones available that give any sort of clue to repair shop costs. They refer only to the service department and so show no effect of parts and accessory sales.

te has the ball... definitely"

"Cāsīte Leads"

"Cāsīte outsells all the rest"



Coast-to-Coast

YOU HEAR DEALERS SAYING THESE THINGS

● And right on top of this, Casite announces the *greatest advertising campaign yet*—to make more millions conscious of the famous guarantee: "Quick Starting in Winter Weather or Double-Your-Money-Back."

Sensational radio quiz show—"Right Down Your Alley"—every Sunday over American Broadcasting Company's entire nationwide network . . . PLUS intensive spot radio campaign in key markets . . . PLUS hard-hitting selling messages in leading farm publications . . . PLUS colorful advertisements in top-ranking city magazines . . . PLUS a complete new kit of dealer selling helps . . . it all adds up to still more Casite business. Be ready to get your full share of the profits. Call your jobber today!

Tune in

"RIGHT DOWN YOUR ALLEY"

Coast-to-Coast Network
American Broadcasting
Company

EVERY SUNDAY AFTERNOON

4:30 Eastern Standard Time

3:30 Central Standard Time

2:30 Mountain Standard Time

1:30 Pacific Standard Time

THE CASITE CORPORATION • HASTINGS, MICHIGAN



LIST PRICE

65¢ A PINT

CASITE CLEANS MOTORS • KEEPS MOTORS CLEAN

Solve Your Labor Shortage

(Continued from page 20)

tives from both Labor and Management. Otherwise the committee is made up of Management members only.

On-the-job training is directed by local Boards of Education, working under a State Board, in states where such Boards exist. Otherwise the administration of this

type of program is local. One function of the local Board is to inspect shop facilities to see that they have the facilities necessary to provide the kind of instruction the prospective trainee wants to get.

Specialty automotive shops—body, paint, radiator or other types—as well as general repair shops,

can qualify for on-the-job training, provided that their facilities conform to acceptable standards.

On either of these training programs, the trainee is paid while he learns. If he is a beginner, he starts at one half the prevailing mechanic pay-rate for that area, and he receives periodic raises, usually every 6 months, as his value to the shop increases. If he has had some experience, he gets instruction-time credit for it and more starting pay. In addition to his wages from his employer, if he is a Veteran with other than a "dishonorable" discharge, he gets a subsistence allotment from the Veteran's Administration, under the "GI Bill of Rights" (Public Law 346).

The apprentice training program set up by the Miami committee calls for 8,000 hours of shop instruction, plus the required classroom work. The starting pay for trainees is 55¢ per hour (one half the average local mechanic pay rate) for a 44-hour work week. Pay increases of 5¢ per hour are given at the end of each 1,000 shop hours. Thus, during his eighth 1,000 hours, the apprentice is paid at the rate of 90¢.

A detailed schedule divides the various operations into groups, and allocates instruction time for each group. For example, motor work

(Continued on page 58)



Dependable Quality AUTO PARTS



Mr. Parts Jobber

We carry the largest and most comprehensive stock of Auto Parts, Supplies and Accessories, stocked, shipped and billed from one house. This unfailing and Dependable source of supply saves you time and money, with Guaranteed Satisfaction on every order. You Can Always Depend on LION.

LION AUTO PARTS AND MFG. CO.

1920 SOUTH MICHIGAN AVENUE • CHICAGO 16, ILLINOIS



"Business was terrible today—four deaf and dumb customers!"

NEW!

POSTWAR DELUXE

Porto-Power



LEADER

in the Mint-full of New Money-Makers Blackhawk Promised You!

Porto-Power, Blackhawk's amazing workshop-on-wheels, is back in *deluxe* form — bigger and better than ever. And, Mister, it's loaded with startling new features and an enlarged

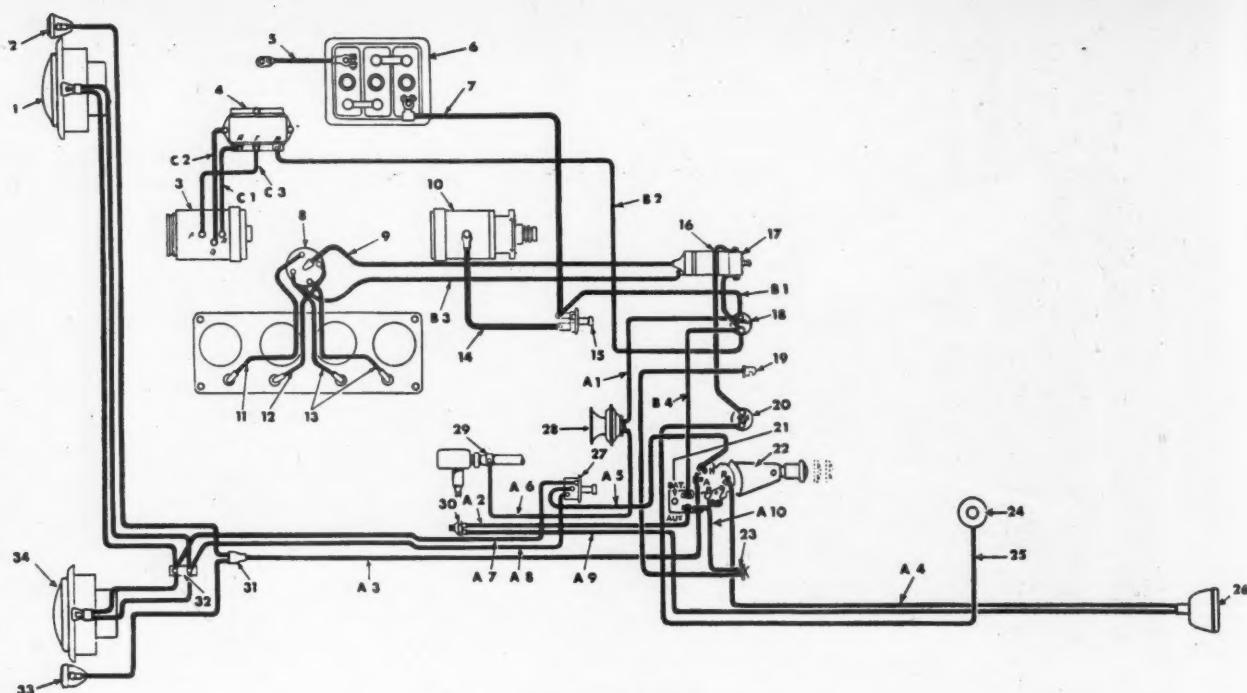
assortment that mean even greater versatility and profit-making ability for this famous all-purpose hydraulic shop tool. It's designed for easy, profitable handling of your repairing, rebuilding and reconditioning jobs. Of course, because of the tremendous demand it will be months before delivery can be made to every shop that wants one. But be sure your order is on file with your Blackhawk Jobber.

A Product of BLACKHAWK MFG. CO., P6106, Milwaukee 1, Wisconsin

There is only one **Porto-Power***. . . it is made by

BLACKHAWK

*Reg. U. S. Pat. Off.



Universal Jeep Wiring Diagram

No.	Name	No.	Name	No.	Name	No.	Name
1	Service Headlamp—Right	10	Starting Motor	18	Ammeter	27	Foot Dimmer Switch
2	Parking Lamp—Right	11	Ignition Cable No. 1	19	Dash Light	28	Horn
3	Generator	12	Ignition Cable No. 2	20	Fuel Gauge—Dash Unit	29	Horn Button Contact Brush to Steering Column
4	Voltage Regulator	13	Ignition Cable No. 3 and 4	21	Light Switch Circuit Breaker	30	Stop Light Switch
5	Battery Ground Cable	14	Starting Motor to Starting Switch Cable	22	Light Switch	31	Slip Connector
6	Battery	15	Starting Switch	23	Dash Light Switch	32	Junction Block
7	Battery Positive Cable	16	Ignition Switch to Fuel Gauge Cable	24	Fuel Gauge—Tank Unit	33	Parking Light—Left
8	Distributor	17	Coil and Ignition Switch Assembly	25	Fuel Gauge -- Tank Unit to Dash Unit Cable	34	Service Headlamp—Left
9	Distributor to Coil Secondary Cable			26	Tail and Stop Lamp		

BODY WIRING HARNESS LONG—LEFT SIDE

A-1	Black—2 Red Tracers Ammeter to Horn Cable
A-2	Green—1 White Tracer Light Switch Circuit Breaker to Stop Switch Cable
A-3	Yellow—1 Black Tracer Light Switch to Connector to Parking Light Cable
A-4	Red—1 White Tracer Light Switch to Tail Light Cable
A-5	Blue—3 White Tracers Light Switch to Foot Dimmer Switch (Center Terminal Cable)
A-6	Black—2 White Tracers Steering Gear Post to Horn Terminal Cable
A-7	Red—3 White Tracers Head Light Junction Block to Foot Dimmer Switch Cable (Upper Beam)
A-8	Black—2 White Tracers Head Light Junction Block to Foot Dimmer Switch Cable (Lower Beam)
A-9	Green—1 White Tracer Stop Light Switch to Stop Light Cable
A-10	Red—1 White Tracer Light Switch Circuit Breaker Terminal to Instrument Light Switch Cable

BODY WIRING HARNESS—RIGHT SIDE

B-1	Black—3 White Tracers Starter Switch to Ammeter Cable
B-2	Red—3 White Tracers Voltage Regulator (Battery) to Ammeter Cable
B-3	Black—2 White Tracers Ignition Coil to Distributor Cable
B-4	Red—3 White Tracers Ammeter Terminal to Light Switch Circuit Breaker Cable

GENERATOR to VOLTAGE REGULATOR WIRING HARNESS

C-1	Red—3 White Tracers Generator to Regulator Armature Cable
C-2	Black—2 White Tracers Generator Ground to Regulator Cable
C-3	Green—2 White Tracers Generator to Regulator Field Cable

White Motor Presents Eleven New Models

After a considerable period of preparation, The White Motor Company, Cleveland, Ohio, has announced its post-war, heavy duty truck program comprising the WB Series of Super Power trucks, and incorporating two new Super

Power engines with features of advanced design, new features in chassis design, and unique cab design slanted entirely at driver comfort.

The line consists of eleven models ranging from the WB-14 rated

14,000 lb. GVW to the WB-3264 rated 50,000 GVW. It includes four new models: WB-28, rated 26,000 lb. GVW; WB-28T, rated 50,000 lb. GVW; WB-2864, rated 45,000 lb. GVW; and WB-3264, rated 50,000 lb. GVW. These four models are powered by two new Super Power engines having the highest output in the company's history. The 260A
(Continued on page 127)



WHIZ

*Cooling System Specialties
Assure Complete Service!*

Complete cooling system service means trouble-free motoring for your customers: profitable business for you! And you'll find it's easy to give complete service—eliminate the danger of burned out bearings, warped valves, frozen rings, blown gaskets that result from overheating—with WHIZ cooling system specialties!

Among the many WHIZ favorites are these popular, quick-selling cooling system products: KLEEN-FLUSH, to clean radiator and water

jacket of rust, scale, corrosion, and sludge . . . COMMANDO RUST PREVENTIVE, to guard against the formation of new deposits . . . INSTANT SEALER, to quickly stop all leaks. Order from your jobber today! Cash in on the big fall market with these nationally advertised WHIZ favorites and the WHIZ merchandising program. R. M. Hollingshead Corporation, Camden, New Jersey; Toronto, Canada. Warehouses in Dallas, San Francisco and Chicago.



PRODUCTS OF
Hollingshead
LEADER IN MAINTENANCE CHEMICALS

Your Labor Shortage

(Continued from page 54)

is allotted 1,500 hours; tune-up, carburetor and ignition get 1,000 hours; electrical, brake and rear-end work 500 hours.

While the Miami committee has not yet completed all of its arrangements for classroom work, the present intention is to handle this part of the program through the

Evening Trade Extension department of the local Vocational School.

Under the "GI Bill," the Veteran apprentice gets, besides his subsistence allotment, an allowance for buying needed tools, plus a tool box, up to a maximum of \$50. His employer buys them for him and bills the cost to the Veteran's Administration.

"When our Association first began the discussion of our present apprentice training program," ex-

plains Clifton, "some of our members questioned the possibility of 'Government domination' of our business and a possible negative reaction on the part of our shop personnel. These fears, however, have proved groundless. Once the program was set up and approved, there has been no display of administrative authority. The various agencies contacted have tried only to be helpful. While shop mechanics were doubtful at first about the effect of the plan on them, before long the mechanic without an apprentice assigned to him was asking for one."

Clifton has 10 regular mechanics and 8 apprentices. The latter represent the choice made from a final screening of about 25 "probationers." The more time the shop management can give to checking the personal habits, background, general character and natural mechanical aptitude of the applicant, Clifton points out, the fewer mistakes in selection will be made.

In his own case, he was anxious to get the program started, so depended to a large degree on apprentices' performance during the allowed 3-month "probation." In this period, the trainee's contract can be terminated at will. After that time, it should be ended only for "reasonable cause."

Southland Chevrolet Company in

(Continued on page 60)

FAIRMOUNT MATCHED TOOLS for BETTER and FASTER WORK



**An Easy Way
to Obtain a Complete
Matched
TOOL KIT**

Here's a suggestion: Whenever you buy a new dolly, spoon or hammer, make sure it is a "Fairmount". You will then before long be the proud owner of the finest body workers' complete *matched* tool kit. This kit enables you, with the *fewest possible number of tools*, to repair any kind of body or fender damage, on every make of car, quickly and expertly.

Send for valuable 84-page book, "Key to Metal Bumping", by Frank T. Sargent. Just send 25¢ to cover postage and mailing.

FAIRMOUNT TOOL & FORGING CO.
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"He doesn't understand the pictures.
He just reads the words."

More Profits!
ATTRACT MORE CUSTOMERS
TURN OUT JOBS FASTER



NEW ARO

CENTER ISLAND LUBRICATION UNITS

Right on the spot where you're working—you have *all hose within easy reach* with the new ARO Center Island Lubrication Units! This increases your profit-per-job by saving time and steps. Builds goodwill, too—with better service and beautifully styled cabinets that impress your customers!

Unit illustrated has 6 automatic reels. Other units available with any combination of reels for chassis, gear, motor oil, air and water. Automatic stops—automatic rewind. Precision-built for long life and profitable performance for you! See your Aro Jobber. The Aro Equipment Corporation, Bryan, O.

Your Labor Shortage

(Continued from page 58)

its various mechanical departments has 9 mechanics and 3 apprentices. In its body shop are 4 men and an on-the-job trainee. The program has been in effect since last August and, according to O. M. Letzelter, service manager, is highly satisfactory to all concerned.

In fact, one of the latter who

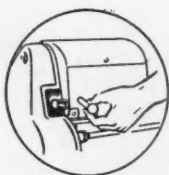
completed his front-end training was offered an outside job at \$65 per week but elected to stay and finish his planned course.

Instruction routine in this shop differs somewhat from that at Clifton's. There are six line mechanics, and trainees receiving mechanical teaching are sent from one mechanic to another on a weekly schedule. While training in the tune-up and electrical section, apprentices are switched daily from one to the other of the two special-

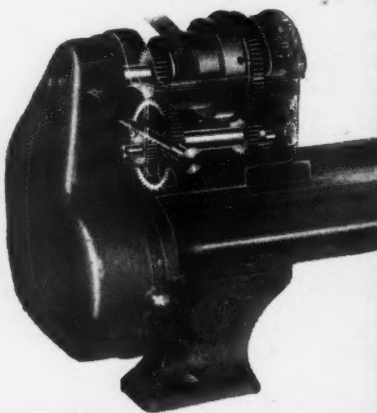
ists: A simple record, drawn from the regular time cards, is kept on the time each trainee devotes to scheduled types of work.

From the foregoing data, it will be seen (readily) that the result of a training program is to expand shop volume, to increase earnings all around — as much as 75% in a busy shop—and to provide the Veteran with a dependable means for self-support. The plan seems to result, also, in raising shop work standards.

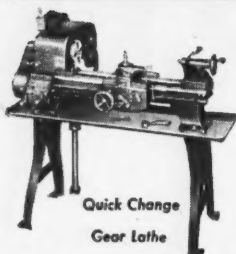
Logan A NAME TO REMEMBER WHEN YOU THINK OF BETTER LATHES



Finger Tip Control for Safety, Ease and Speed in Shifting Back Gears



BACK GEARS ENCLOSED IN HEADSTOCK



SPECIFICATIONS COMMON TO ALL LOGAN LATHES ... swing over bed, 10 1/2" ... bed length, 43 1/2" ... size of hole through spindle, 25/32" ... spindle nose diameter and threads per inch, 1 1/2"—8 ... 12 spindle speeds, 30 to 1450 rpm ... motor, 1/2 hp, 1750 rpm ... ball bearing spindle mounting ... drum type reversing motor switch and cord ... precision ground ways, 2 V-ways, and 2 flat ways.

PLUS PATENTED SHIFTER RACK INCREASES SAFETY AND EFFICIENCY, ADDS TO APPEARANCE OF LOGAN LATHES

Logan advanced design encloses back gears in the headstock and places the Patented Shifter Rack which controls these gears on the front side of the headstock, at the operator's finger tips. There is no need to reach over the headstock, or to lean forward close to moving parts to shift the back gears. The operator avoids risk and makes the shift more easily and quickly. Here is another example of the practical designing which makes Logan Lathes outstanding in accuracy, speed, durability and safety, and in trim, clean cut appearance. For full information, see your Logan Lathe dealer, or write direct for the Logan catalog.

L-2-M

LOGAN ENGINEERING CO. CHICAGO 30, ILLINOIS

No Change at Spicer

Although the name of Spicer Manufacturing Corp. was recently changed to Spicer Manufacturing Division of the Dana Corp., there will be no changes of any kind in any phase of the organization, and the business will continue to operate exactly as it has in the past, it was announced today by Charles A. Dana, president.

Name and corporate structure of the Spicer interests were rearranged to eliminate continued confusion of the Spicer name with names of affiliated plants turning out products controlled by Spicer but marketed under their own trade names. These include Parish Frames, Brown-Lipe Gear boxes, Salisbury axles, etc.

Mr. Dana emphasized that each of the affiliated companies retains its established plant and product names in becoming a division of the newly constituted Dana Corp.



"We interrupt this advertising to bring you 60 seconds of . . ."

When you're glad
you have a
Snap-on

Removing a flanged axle shaft is just one of many "tough jobs" that can be handled *easily . . . quickly . . . and properly* with Snap-on's Universal Puller Tool. And here's why . . .

(1) The Booster Hammer gives a sudden, powerful blow, guided by the slide shaft, in the same direction as the pull. (2) The pulling force is distributed equally on all sides, eliminating binding. (3) As a result, the guided blow, combined with the center tension gives you a pulling force that is more effective than any other on the market today.

In combination with a 2- and 3-way yoke, you have a multi-purpose tool that can be adapted to any one of dozens of pulling jobs. Available through Snap-on's nationwide direct-to-user tool service.

Write for complete catalog of Snap-on service tools.



RUGGED OPERATIONS FROM REAL LIFE—
... PULLING A FLANGED AXLE SHAFT

Snap-on Tools
THE CHOICE OF BETTER MECHANICS

SNAP-ON TOOLS CORPORATION
8036-J 28th AVENUE • KENOSHA, WISCONSIN

OCTOBER, 1946

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RSD
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Advantages of being a Registered Service Dealer

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You take advantage of the special price available only to Auto-Lite RSD dealers. Greater profit and larger volume can both be yours when you sign an Auto-Lite RSD contract.



ADEQUATE INVENTORY

You at all times are able to fill your customer's wire and cable requirements on popular makes of cars—build your reputation for quality products and quick, dependable service.

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BUSINESS!



Steelductor Spark Plug Wire Sets

Auto-Lite furnishes spark plug wires in both copper and in Steelductor, an automotive type of the 7 strand stainless steel conductor made famous through its use by fighting planes on every battlefield. Available on Spools or convenient ready-to-install sets complete with terminals and nipples to fit all popular cars.

Low Tension Wire

Auto-Lite wire and cable is a complete line, for every automotive use. Wire for lighting and other low tension circuits is available in many shapes, sizes and insulation materials. Write for the Auto-Lite catalogue, Form C-541, for detailed information on wire and cable for every automotive need.



Battery Cable

WITH ANTI-CORRODE TERMINAL

Properly installed, Auto-Lite Battery Cable with the revolutionary Anti-Corrode Terminal resists corrosion that builds resistance and restricts proper current flow to the starter and other electrical units. This type battery terminal is standard equipment on 15 makes of cars.

THE ELECTRIC AUTO-LITE COMPANY
TORONTO, ONTARIO TOLEDO 1, OHIO

TUNE IN THE AUTO-LITE RADIO SHOW STARRING DICK HAYMES, EVERY THURSDAY NIGHT, 9:00 P.M.—E.T. ON CBS

Automotive WIRE & CABLE

Larry Puts Himself on the Pan

(Continued from page 23)

"Okay. But Pop's going to be plenty sore if he hears about you pushing it in ahead of everything else."

Larry spun around and there was an ugly twist to his mouth. Ain't you ever gonna grow up?" he asked. "Or am I gonna have to kick a little sense into you some time?"

"I'm not going to say a word," said Tommy. "But you can't fool Pop very long."

He raised Powers' car up to a lift and after draining the crankcase, he stood for several minutes, studying the front-end suspension system. The more he looked at it, the more puzzled he became. Still

perplexed, he removed the oil-pan bolts. He tried to push the pan forward, then backward. It would not clear either the front frame member or the spring. After resting a few minutes, he tried it again, and again he failed. He heard Larry's footsteps beside the car, then felt a sharp nudge in his ribs.

"We ain't got all day," growled Larry.

Tommy turned. "I can't drop that pan," he said.

"Well, ain't that too bad?" mocked Larry. "Looks like Pop ain't such a red-hot teacher after all. Look here and I'll show you." He pointed to the pan. "You just take hold of the front like this and give a shove and—" He broke off the sentence with a grunt.

"See?" said Tommy. "It won't go."

"Oh shut up." Larry pushed and pulled and swore.

A shadow fell across the floor and Tommy turned and saw Pop O'Neill grinning at them.

"That job ain't too much for you, Larry, is it?" he asked. "Who's it belong to?"

"That Powers kid."

"'Stinky's' boy, eh? He ought to be in reform school. His old man blackjacks some dealer into sellin' the kid a car and now it's practically a wreck. What'd he do, burn' out a bearin'?"

"Yeah. And he's gotta have it by five."

Pop looked at him sharply.

(Continued on page 68)



LEMPCO Pressurematic Power Presses are fast, powerful, adaptable. They can be used for straightening, bending, pressfits and many other automotive maintenance jobs.

Star performance is assured because of the many exclusive features offered by the Pressurematic: foot pedal controls, adjustable bolster, movable ram-head and extra rigid construction. Automatic pressure control reverses ram at any pre-set pressure. Electrically driven models in 20, 40 and 60 ton capacities. Manually operated hydraulic models in 40 and 60 ton capacities. These features save manpower and money . . . assure you of greater profits and increased shop efficiency.

Write for illustrated catalog that lists full details and special features offered by Lempco Pressurematic Power Presses.



5727 DUNHAM ROAD
BEDFORD, OHIO



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Decoys are all right for ducks...

but... decoys won't pay off in customer good will when you're installing parts in a car or truck.

Owners want a first-class mechanical job—they want "the McCoy"—parts that fit! "The McCoy" for vehicles built by Chrysler Corporation Divisions is *MoPar* Factory Engineered and Inspected Parts.

Why? Because they're built to the specifications which Chrysler Corporation engineers know are necessary to deliver top performance. And that kind of performance keeps your customers happy—keeps them coming back to you when they need service.

NOTE TO ALL
REPAIR SHOPS



If you need parts of any kind for a Plymouth, Dodge, De Soto, or Chrysler passenger car, or Dodge *Job-Rated* Truck, obtain them from a dealer for these vehicles.



for

Plymouth
DODGE
DeSoto
CHRYSLER
DODGE <i>Job-Rated</i> TRUCKS

CHRYSLER CORPORATION—PARTS DIVISION
DETROIT 31, MICHIGAN

OR AGE

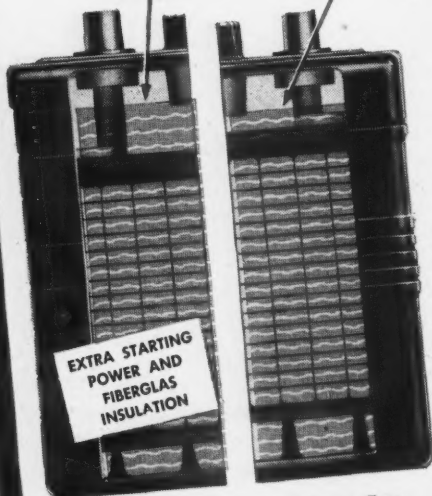
Sensational Prest *hi-level*

HERE'S WHAT MAKES THE DIFFERENCE

Unique new design and construction gives Prest-O-Lite Hi-Level more than 3 times the liquid reserve of ordinary batteries.



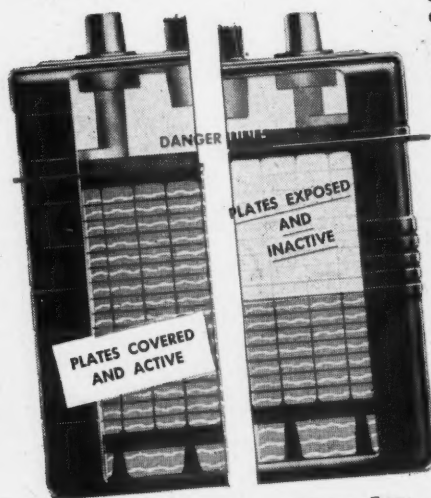
Both Batteries Filled



Prest-O-Lite Hi-Level

Ordinary Type

Liquid Level After Equal Evaporation



Prest-O-Lite Hi-Level

Ordinary Type

Illustrations above show the result of equal evaporation in the Prest-O-Lite Hi-Level Battery and other batteries. As shown by illustration on the far right, plates of ordinary batteries are exposed sooner by water loss and then become inactive faster.

The amazing Hi-Level principle gives you a battery that is really different—a battery with exceptional sales advantages. What's more, Prest-O-Lite Batteries with oversize electrical capacity and Fiberglas insulation last longer than batteries without the Prest-O-Lite Hi-Level features.

Find out about this new battery sensation and the business-boosting promotion program behind it . . . radio that spotlights your business, promotion kits, the Prest-O-Lite Profit Plan . . . Yes sir! If you want a battery deal that puts you out in front, find out now about Prest-O-Lite Hi-Level.

new...

o·lite Battery

... YOU ADD WATER
ONLY 3 TIMES A YEAR

IN NORMAL CAR USE



Backed by Nation-Wide Radio

Prest-O-Lite's coast-to-coast radio program does a real job. Spot announcements beamed directly to your car owner customers—timed to capture audiences of top stars and hottest news for business building action.



Backed by Record-Setting Promotion

You'll get eye-stopping window trims, counter cards, big, colorful banners, punchy posters and give-aways that will build traffic and sales for you.



Send for Prest-O-Lite Profit Plan

Look what Prest-O-Lite gives you . . . a high quality battery, plus the startling new HI-LEVEL feature, competitive prices, hard hitting advertising and promotion. For complete details write today to

PREST-O-LITE BATTERY COMPANY, INC.
INDIANAPOLIS 6 INDIANA

ASK THE MAN BEHIND THE



THE
BATTERY
WITH A

KICK

Larry on the Pan

(Continued from page 64)

"You didn't make no fool promise like that, did you?"

"He said he was in a jam with his old man—"

Pulling at the lobe of an ear, Pop looked at Larry searchingly. "Are you sure that's the only reason you promised it?"

"Why," exploded Larry, "you don't think I—"

"I think there's been some finaglin' goin' on," said Pop. "And if I'm ever able to prove it, unemployment is gonna return for certain people."

"I thought I could do the job in a coupla hours."

"The way you were goin' at it, it'd keep you busy for a coupla months."

"You're so smart," said Larry.

"How would you 'a' gone about it?"

"In the first place," said Pop,

"I'd 'a' looked at an instruction book. And when I did I'd 'a' found out you can't drop the pan on a 1947 Studebaker Champion that way. On account of the way the front-end suspension is located in relation to the pan the pan won't clear it at either end. The factory says to take the whole engine out."

"I never heard—" began Larry.

Pop scowled. "You never heard!" he repeated. "That's your standard excuse. And it ain't even funny. Not like the guy that was explainin' how some Chinese bandits sliced off his ears. And somebody asked him what happened then. And he said, 'I never heard.'"

"Am I supposed to laugh?" asked Larry.

"Might as well do it now," said Pop, "because it ain't gonna be very amusin' when you tell 'Stinky's' kid you can't have his car ready on time."

"I'll just call him up and tell him."

Pop regarded him through narrowed lids. "Why don't you run over and tell him personally?" he asked. "Then you could give him his money back at the same time."

New Plant For Du Pont

A plant to cost approximately a million dollars for the manufacture of Du Pont chemical specialties, including such automotive maintenance products as polishes, waxes, cooling system cleaner, sealer and rust inhibitor, will be built at West Toledo, Ohio, the company announced today.

The new plant will be located on the same site as the company's present finishes plant. It will be a two-story structure providing manufacturing, office and warehouse facilities.

A demand for the No. 7 Line products exceeding the capacity of present facilities necessitated the project, according to G. W. Sherin, manager of specialties sales. He said that some thirty items will be made at the West Toledo plant, which has been engineered so as to allow readily for future expansion. Construction will begin when government authorization is received and materials are available.

The Greatest National
NATIONAL VOLUME BUYERS SHOW
in History

20th
ANNUAL
NATIONAL
AAMA
SHOW

FEBRUARY 1947


CONVENTION HALL ATLANTIC CITY, N. J.

AUTOMOTIVE ACCESSORIES EXPOSITION

- Here is the finest setting for your product . . . Everything is designed for Big Business.
- Know what all the industry is doing . . . Meet new people, see new products, learn about new chain store operations.

Automotive Accessories Manufacturers Association
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The National AAMA Headquarters TRAYMORE Hotel



YOU'VE BEEN WAITING...

Here it is!

There's nothing like it in the industry...takes up less than fifth the space of a parked car.

There is every essential necessary to put you in the brake relining business...let you duplicate car manufacturers' precision methods on every reline job...reproduce new car brake performance.

Only with Thermoid "Precision Processing" can you duplicate factory precision in brake shoe relining. Only with Thermoid "Precision Processing" can a relined shoe be scientifically reconditioned to accurately fit the drum, standard or oversize, and assure a brake job that's "right the first time". Only with Thermoid "Precision Processing" can you eliminate the customary expensive call-backs for readjustments...build a reputation for safe, speedy work that builds prestige and profits.

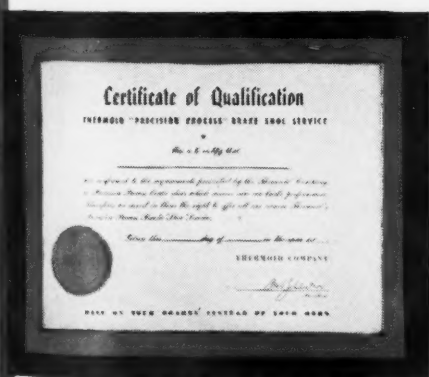
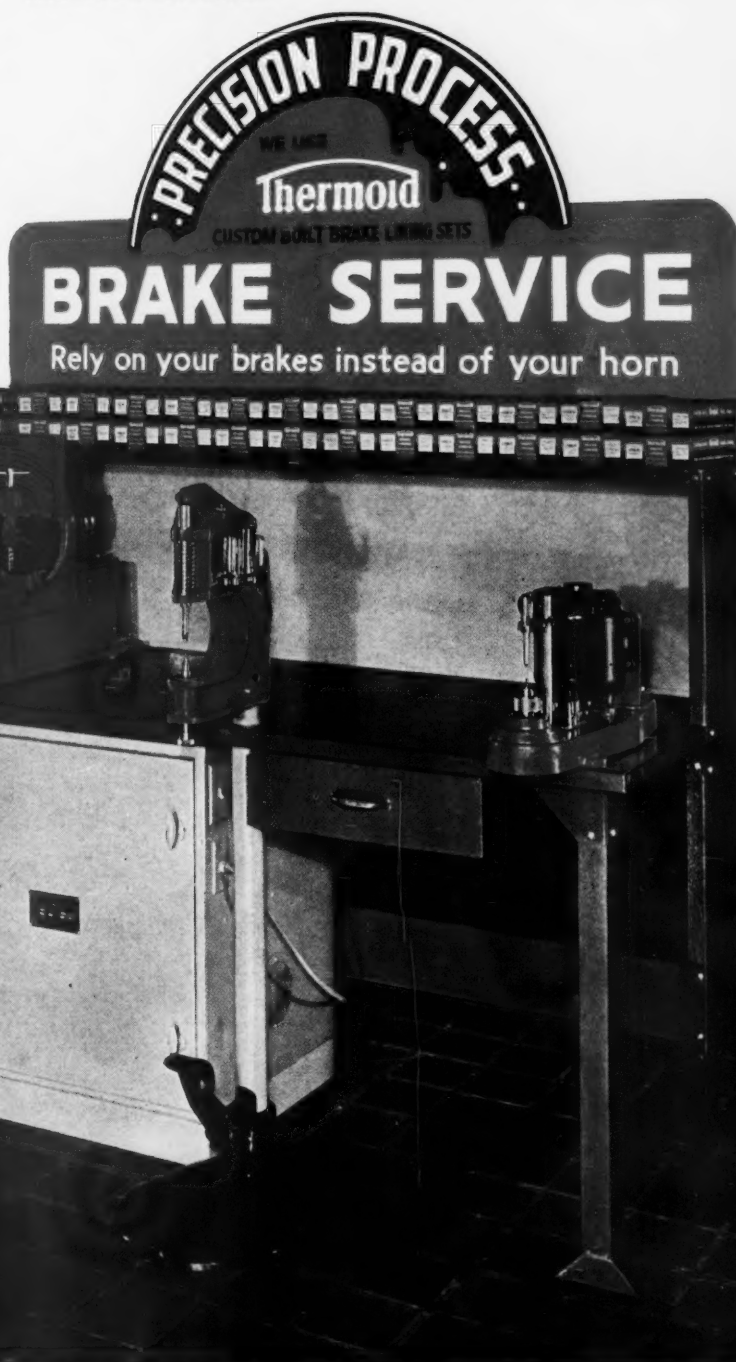
Ask your Thermoid Jobber about the amazing "Precision Process" Brake Service Department, or, write to

Thermoid Company • Trenton 6 • New Jersey

Thermoid presents the most sensational, the most talked about, the most complete brake service in the industry:—
The Exclusive Thermoid "Shop-within-a-shop",
the compact, money-making

Thermoid PRECISION PROCESSING BRAKE SERVICE DEPARTMENT

● Thermoid "Precision Processing" Brake Service Department includes: rugged steel bench with heavy-duty top and shelf for stock of CB Sets, Thermoid Standard Precision Burnisher, "Red Top" Riveter, Model "B" Drilling and Counter-Sinking Machine, and Dust Collector.



This Certificate of Qualification is awarded to every qualified Thermoid Brake Service Department.

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THERMOID COMPANY • TRENTON 6 • NEW JERSEY

THERMOID CUSTOM-BUILT BRAKE LINING

A Leader in Both Original Equipment and Replacement

Fields The outstanding quality of Thermoid Custom-Built Brake Lining Sets is so well recognized that for years car manufacturers have selected Thermoid as their original equipment brake lining. Car owners, too, prefer Thermoid CB Sets. From actual experience on the road they know that Thermoid Linings stand up, give miles and miles of safe, sure performance. As you would expect of a leader, Thermoid Brake Linings are well advertised. But that's not all. Every set of Thermoid Custom-Built Brake Lining carries . . .



The Exclusive PTL Certificate of Correctness

No other brake lining carries this seal of approval of the famous Pittsburgh Testing Laboratories. No other brake lining has such a sure-fire sales maker . . . an absolutely unqualified statement by a well-recognized independent authority that Thermoid is the correct brake lining for the car specified. Naturally, being the correct brake lining, specially designed for each make and model of car, Thermoid performance in any car can be counted on as tops.

Thermoid

THERMOID COMPANY • TRENTON 6 • NEW JERSEY

Fleet Maintenance Means Profit

(Continued from page 32)

second "mezzanine," 20 by 40 feet, over the parts room at the front of the structure, doubles up the parts-storage space.

Situated on a corner, the building has eight entrances equipped with overhead doors. Five of the entrances face one street, and 3 face another. Climatic conditions make it possible to leave the doors open most of the time, supplying an abundance of natural light to supplement three large skylights. The roof trusses are surfaced with aluminum paint, which by reflection provides still more light. A rear door gives access to a parking lot behind the building.

A year after it was completed, the shop was servicing approximately 20 truck fleets of various sizes, including the utility company mentioned. Finding himself somewhat crowded for room, Collins added to his shop structure another, 100 by 110 ft. His business now has outgrown these two buildings, so, he plans to erect a third one, 120 by 140 feet, on his parking space at the rear, as soon as the necessary materials become available.

Currently, the garage is servicing 51 trucks and 30 passenger car fleets covering many lines of business, including bakeries, furniture stores, a department store, two utility companies, several building supply firms and several contractors, plus vehicles operated by Municipal, County, State and Federal government units. Many commercial concerns operate passenger cars for the use of sales, service and executive personnel.

In making his bid for fleet maintenance business, Collins offers a roomy, well-planned building; precision-testing and time-saving shop equipment; adequate and competent personnel, including aligning and tune-up specialists; 24-hours-per-day service; a sizable replacement parts stock; and a sympathetic understanding of fleet owners' problems.

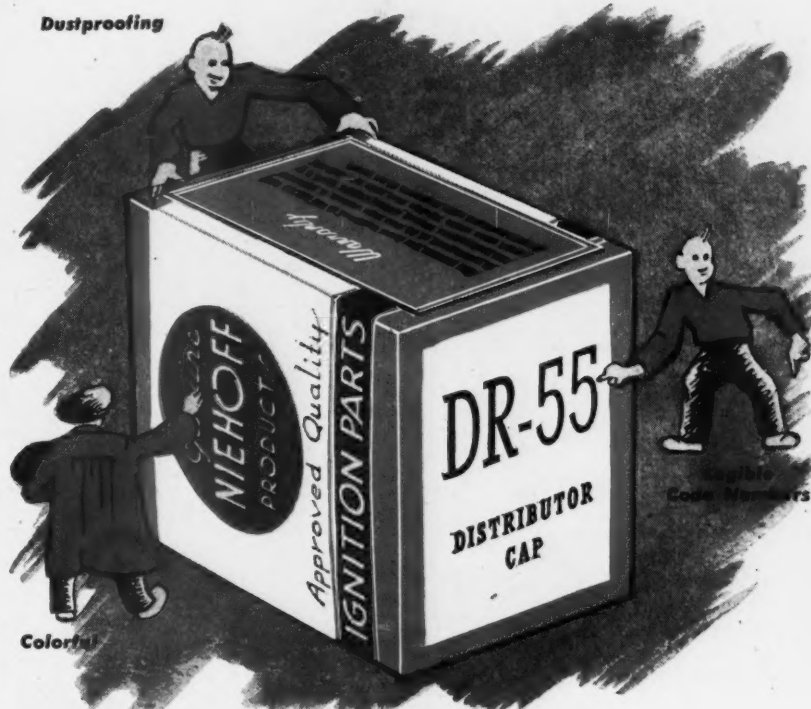
The shop's tooling includes two aligning machines—one for passenger cars and one for heavy duty

trucks—two motor analyzers, a generator-starter test stand, distributor testing and synchronizing apparatus, electrically-powered pin hole and cylinder hones and valve refacing and reseating equipment. The welding apparatus used consists of both oxy-acetylene (self-generating, as well as purchased

tank, varieties) and electrical arc types.

Most of the newer portion of the building is allocated to accident repair and general body reconditioning. Among the equipment items used for this work are portable electric drills, grinders and buffers, portable hydraulic jacks, pneumatic hammers and an "air drill." The last named, because of its lightness and high rpm., seems to be

(Continued on page 78)



THE PACKAGE that Tells... and Sells

Distinctive, colorful packages . . . inviting to the eye . . . that fairly shout "Come and buy me" . . . complement NIEHOFF Approved Quality Products.

They have a quality impact upon your customers . . . can be readily and securely stacked in NIEHOFF Service Stock Cabinets or upon dealers' shelves . . . and the large easy-to-read code numbers identify contents quickly. Sturdily constructed with adequate tensile strength and dustproofing to insure product protection.

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Branches: 1342 S. Flower St., Los Angeles 15, Calif., 250 W. 54th St., New York 19, N. Y.

NIEHOFF

APPROVED QUALITY PRODUCTS

Willys Announces Bigger Jeep

(Continued from page 25)

2000 rpm. The carburetor is a 1¼ in., Carter downdraft type. An Oakes Products heavy duty oil bath air cleaner is supplied as extra equipment. Crankcase ventilation is by a sealed system from the air cleaner tube to the intake manifold actuated by an AC valve in the intake manifold which is connected

by a tube to the valve spring cover.

Transmission is the model T-96 Warner Gear with syncro-mesh helical gears. Gear shifting is controlled by the remote gearshift lever on the steering column, as illustrated. The steering gear is supplied by Ross, Model T-13108, of cam and twin lever type with

cross steering linkage. It has a variable ratio of 14-12-14 to 1.

An 8½ in. O.D. Auburn clutch, No. 8501-19, is used. It has heavy duty pressure springs giving a total spring pressure of 843 lb. with a single plate. The latter, supplied by Borg & Beck, has a torque capacity of 120 lb. ft. The clutch incorporates a throwout sealed ball bearing.

The front suspension, as illustrated, is entirely new, planar independent springing employing a reverse Elliot steering knuckle. The transverse spring for this suspension contains seven leaves, plus a spacer and a plate, has a width of 1¾ in., and is 50 in. eye to eye. In mounting, the transverse semi-elliptic dow type spring is connected at the lower end of the steering knuckle support while the upper end of the support is linked to a bracket on the frame to provide vertical movement to the wheel during bounce and rebound. The kingpin is fitted with a Timken roller thrust bearing.

Monroe telescoping hydraulic way control shock absorbers are used front and rear. They are mounted between the outer end of the spring and the front suspension upper arms at the front, and inside the frame at the rear. Both front and rear shocks have a one inch diameter cylinder.

(Continued on page 74)

Undercover Story!



There's more to tire mileage than tires. The finest tire requires a quality tube *undercover* to give outstanding service.

You sell *real* tire mileage—you protect yourself and your customer when you sell Durkee-Atwood Inner Tubes. These tubes, now made exclusively of Butyl, hold air longer, resist heat, fight puncture damage. A Durkee-Atwood Inner Tube is the perfect mate for the finest tire you have on your racks.

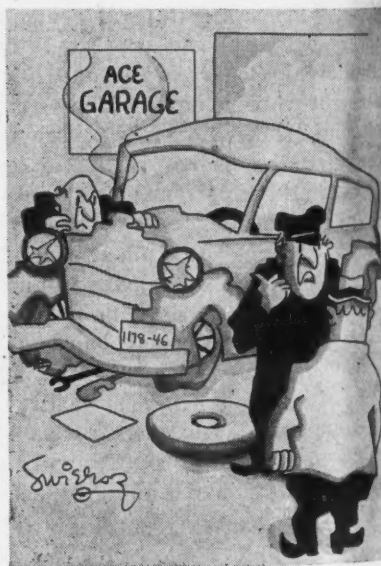
DURKEE-ATWOOD CO.
MINNEAPOLIS 13, MINNESOTA



DURKEE-ATWOOD

INNER TUBES

TIRE PAINT • V-BELTS • RADIATOR HOSE
RUBBER • PLASTIC • CHEMICAL PRODUCTS



"We gave your car a thorough checkup and one of your spark plugs is O.K."

BUILT TO LAST

... a long, long time



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and Bus • Radio • Motorcycle • Tractor
Aircraft • Marine • Diesel • Stationary
Sold and serviced by Willard Dealers
everywhere.

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"SAFETY-FILL"
BATTERIES

Dependability • Performance • Long Life

WILLARD STORAGE BATTERY CO. • CLEVELAND • LOS ANGELES • DALLAS • TORONTO

Willys Jeep

(Continued from page 72)

Rear suspension is conventional with a semi-elliptic dow type rear spring having nine leaves, $1\frac{3}{4}$ in. wide, and an eye to eye length of 50 in. The spring is shackled at the rear and mounted in rubber bushings of one inch O.D. and $9/16$ in. I.D. at the front and rear. At normal load the rear shackle is set 15 deg. to the vertical.

A semi-floating Spicer Model 23-1-2071 rear axle is used. It is of hypoid bevel type with a ratio of 4.88 to 1 and has a bevel gear differential. The drive pinion has a center drop of $1\frac{3}{8}$ in.

The service brake system is Bendix hydraulic expanding of two-shoe double anchor, self-centering type, operating in all four wheels. Brakes are $10 \times 1\frac{3}{4}$ in. The front wheels have one-inch hydraulic cylinders, the rear wheels, $\frac{7}{8}$ in. cylinders. A one-inch, $1\frac{1}{8}$ in. stroke,

master cylinder is mounted on the left side rail just to the rear of the steering gear mounting and is actuated through a direct connection to the foot pedal. The total braking area is 140 sq. in. The hand brake is of pistol grip type with the lever located to the left of the driver. It is connected by cable and conduit to the lever and operates on the rear service brakes.

Electrical equipment includes a 15 plate, 100 amp. hr. Electric Auto-Lite or Willard battery with double baffle caps with rubber gasket and star level indicator. The other electrical equipment supplied by Auto-Lite includes the starting motor with manual drive engagement, 6 volt, 35 amp. shunt wound generator; voltage regulator, distributor, coil.

Lighting system includes Corcoran-Brown 7 in. sealed beam headlamps, parking lights, stop tail and license light.

Wheels are 15×4.00 drop center type with 6.00×15 four ply tires.

The fuel system has a 15 gal. gas tank mounted under the body with the filler neck on the right hand side and coming out of the body side panel. The AC fuel pump is mounted on the engine. A King Seeley gasoline gage is installed in the tank.

The cooling system is pressure type, opening between $3\frac{1}{4}$ and 4 pounds per sq. in. The radiator supplied by Jamestown Metal Equipment, is of tube and fin type with a 2 in. core and a frontal area of 282 sq. in. The radiator tie rod bracket is on the center line of the car. A 15 in. fan is used.



Why continue to do your cleaning the messy way when, by using SOAX, you can do a thoroughly clean, laundry-like job?

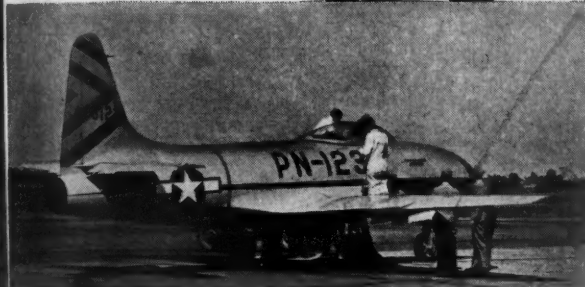
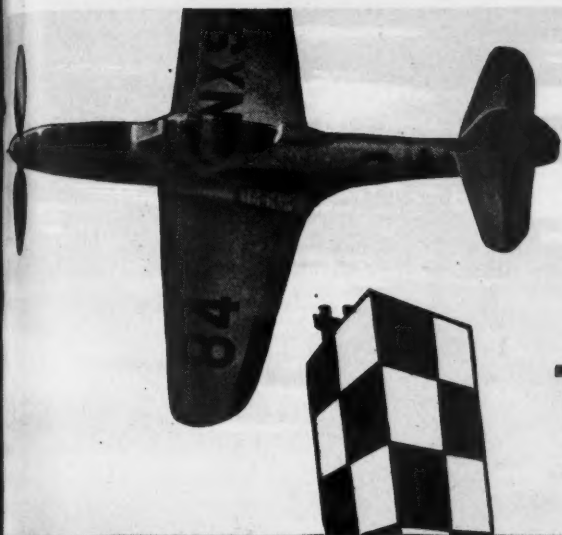
SOAX cleans all metals of carbon, gum, grease and paint. Its Direct Action gets right down to the metal, but doesn't harm even soft metals. SOAX is NON-combustible—is easy on your hands. Can be used on carburetors, fuel pumps, pistons, valves, etc., etc.

Contact your jobber or write us direct.

E. A. GERLACH CO., 410 BEURY BLDG., PHILA. 40, PA.
MFRS. of 70 STRIPPER . . . JELZINE . . . SPRUCE JELL . . . SOAX



SPEED RECORDS SHATTERED IN 1946 THOMPSON TROPHY RACES



Major Lundquist's P80-Lockheed Shooting Star, winner of the world's first closed course race for jet planes, six 30-mile laps in the 180-mile race. The P80 is powered by a General Electric I-40 jet engine.



"Tex" Johnson's Allison-powered P39-Bell Airacobra, winner of the reciprocating engine division, ten 30-mile laps in a 300-mile race.

Major G. E. Lundquist (left), winner of the jet plane division of the Thompson Trophy Race with an average speed of 515.853 miles per hour. Alvin Johnson (right), winner of the Thompson Trophy in the race's reciprocating engine section, with an average speed of 373.908 miles per hour. (The pre-war record made by Roscoe Turner in 1938 was 283.41 M.P.H.)



THE Annual Thompson Trophy Race, discontinued during the war, was resumed September 2, 1946 at Cleveland. How greatly airplane speeds have gone up in this seven-year span is graphically evidenced by the winning jet plane's average speed of 515.853 miles—232.44 miles per hour faster than any previous Thompson Trophy Race record.

The Thompson Trophy Race is known as the "Indianapolis of the Skies". It serves as a proving ground for innovations that contribute to higher speeds, greater endurance, and better maneuverability of aircraft.

Back of the romance and drama of the Thompson Trophy Race, with its daring pilots banking vertically around pylons at speeds that approach that of sound, is the serious purpose of advancing American aviation so that its citizens can travel faster, more safely in peacetime—be better armed should our country ever again be forced into war.

Thompson  Products, Inc.

CLEVELAND • DETROIT • LOS ANGELES

Precision Parts for Automobiles and Airplanes. Manufacturers of the Famous Thompson Sodium-cooled Aerotype Valve and Vanes, Blades and Assemblies for the latest type Jet Propulsion Engines





IN THE CASE OF THE FUTURE

J. E. HENRY, President
WILKIE BUICK, INC.
Philadelphia, Pa.

STEVENSON 0260

WILKIE BUICK, INC.
1724 NORTH BROAD STREET
PHILADELPHIA 21, PA.
August 5, 1946

J. E. HENRY
PRESIDENT

Mr. L. A. McQueen, Vice President,
THE GENERAL TIRE & RUBBER COMPANY,
Akron, Ohio

August 5, 1946

Dear Larry:

Our association with The General Tire & Rubber Company began in 1938. Our relationship during all this time has been most cordial and profitable.

In 1940 and 1941, the last two years of normal automobile manufacture and sales before the war, we changed over to GENERALS approximately 30 percent of all the cars we delivered. The sale of General tires and tubes during those two years reached a total of \$133,421 and our gross profit was \$37,054. The only expense of any consequence against this figure was the salaries of the tire manager and one tire attendant.

The success of this operation we attribute, first, to the natural appeal of high quality General Tires and, second, the efficiency and experience of the men who knew tires and handled for us this end of our business. Their judgment was sound and they were actually General Tire salesmen.

A most important feature of the combination of General Tires and our New Car Department was that in the days of intense competition many a new car deal was made because of the extra profit thrown into the transaction by the General change-over plan.

We look forward to even better days ahead. With new cars coming in greater numbers our GENERAL business will be well on its way to a new all time high.

Sincerely yours,

WILKIE BUICK, INC.

J. E. Henry
J. E. Henry, President

PENNSYLVANIA'S LARGEST BUICK DEALER

JEH:ep

Coming Soon
The Greatest
TIRE
ever built
Another
Premium
GENERAL

Generals... YOU CAN JUDGE FROM THE PAST

The wartime necessity for accepting substitutes made buyers more than ever conscious of the fact that "*It pays to buy the best*". That's why the automobile dealer with a General Tire Franchise will continue to get more than his share of tire sales. GENERAL'S challenging Change Over policy has given GENERAL dealers an added extra-profit of at least 33 $\frac{1}{3}$ percent in the past. It stands to do even better today.

The *new General Tire*, the *greatest tire* ever built, will

soon be on the way. This will be a *premium* tire—of course—with smarter appearance, greater safety and *more mileage*. It goes to a market pre-sold on *Changing Over to GENERALS*. It will add prestige—and extra profits—to the dealer whose General Franchise permits him to handle it.

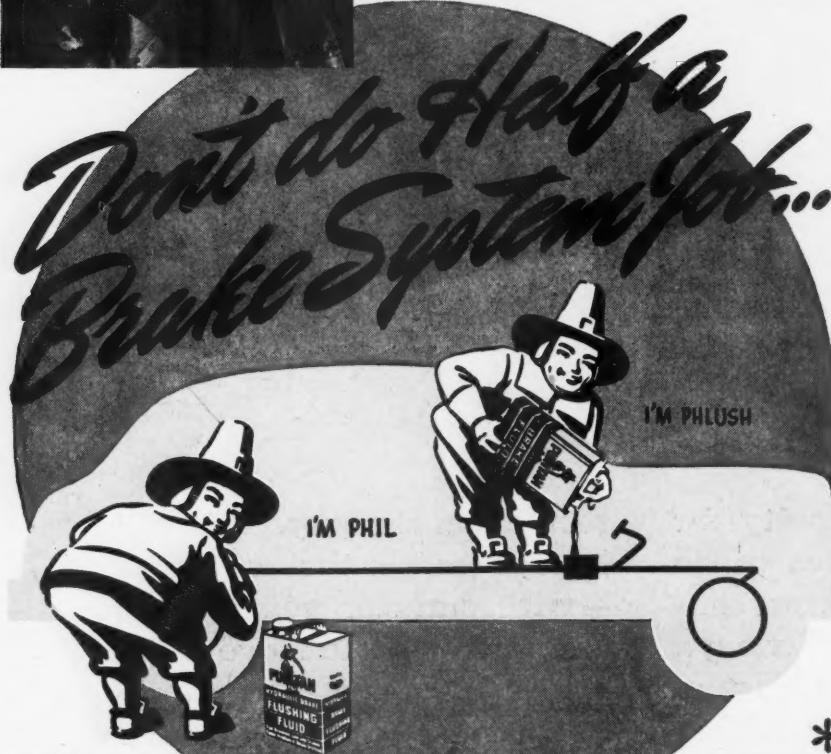
The GENERAL TIRE CAR DEALER PLAN, the best tire plan of today, is now open to NEW dealers who want to tie up with the best. Write *now* for complete details.

THE GENERAL TIRE & RUBBER COMPANY
AKRON, OHIO





YOU WOULDN'T PUT IN ANTI-FREEZE WITHOUT REPLACING LEAKY HOSES



Half a job no matter what it is may often be worse than no job at all. And that's particularly true when it comes to hydraulic brake systems that contain gummy, dirty, over-worked brake fluid.

That's the time that a *Puritanize job is called for. And with Puritan Hydraulic Brake Flushing Fluid, that does such a thorough job, so quickly, you can do right by your customer and make a sizeable sale and profit.

The approaching fall season is the logical season for a Puritanize job. Preparing the car for winter driving includes a thorough check of the brake system with special attention to the condition as well as the level of the hydraulic brake fluid.

In Puritan Hydraulic Brake Flushing Fluid and Puritan all-"miscible" Hydraulic Brake Fluid you have two dependable products to aid in brake safety. Get your supply from your NAPA jobber now.

*PURITANIZE

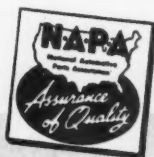
- 1 Clean out brake line with fast acting, thorough Puritan Hydraulic Brake Flushing Fluid.
- 2 Refill with non-gumming, long lasting, all-"miscible" Puritan Hydraulic Brake Fluid.

PURITAN

COMPANY, INC.

ROCHESTER 6, NEW YORK

HYDRAULIC BRAKE FLUID AND FLUSHING FLUID • GASKA-SEAL NO 1, 2, AND 3
SHOCK AND KNEE-ACTION OIL



Fleet Maintenance

(Continued from page 71)

in especially high demand by the shop's metal men.

In conducting its around-the-clock operation, the shop employs two shifts, plus two mechanics whose time laps over from one shift into the next. One of these men comes in at noon and the other at 3 p.m. The day force consists of a tune-up man, two frame and aligning men, fourteen mechanics, eight body metal men, a trimmer, a lubrication man, a washer and three general helpers.

One mechanic, plus the two split-shift men, handle needed night work. Collins and his service manager, Harry Dickerson, serve as floor salesmen and supervisors. The body section is operated as a separate "department." A full-time estimator does the "collision" work estimating, both inside and outside the shop.

The parts department carries an inventory approximating \$14,000 on a cost basis. Its stock is reasonably complete on parts for Ford, Dodge, Plymouth, Willys and Nash. It also carries some of the faster moving parts, such as kingpins and bushings, piston rings and carburetor and electrical items for nearly all makes of vehicles regularly serviced.

(Continued on page 89)



"Please tell Papa where you buried his car."

A UNITED MOTORS FRANCHISE

GIVES YOU THESE ADVANTAGES

ORIGINAL-EQUIPMENT PARTS—leading lines of leading manufacturers.

UP-TO-THE-MINUTE SERVICE INFORMATION—easy to use; speeds your work.

NATIONALLY KNOWN LINES—respected and accepted everywhere.

TIMELY SALES PROGRAMS—individually planned.

MERCHANDISING ADVICE—based on long experience.

WAREHOUSE BACKING—saves time, broadens inventory availability.

COMPLETE PARTS LINES—parts for old cars and new.

UNITED MOTORS SIGN—business-boosting identification.

With the most asked-for lines in the automotive field . . . with all the helpful services that go with a United Motors franchise . . . you'll be all set to tap the greatest pre-sold parts and service market in America. See your nearby United Motors distributor or write us direct.



UNITED MOTORS SERVICE

DIVISION OF GENERAL MOTORS CORPORATION • GENERAL MOTORS BUILDING, DETROIT 2, MICHIGAN

DELCO Batteries

HYATT Roller Bearings

NEW DEPARTURE Ben

DELCO-REMY Starting,

AC Fuel Pumps, Gauges
and Speedometers

DELCO Auto Radios

Bearings

Lighting and Ignition

INLITE Brake Lining

HARRISON Heaters

HARRISON Thermostats

KLAXON Horns

DELCO Radio Parts

DELCO Home Radios

DELCO Shock Absorbers

HARRISON Radiators

GUIDE Lamps

DELCO Hydraulic Brakes

Mechanics in Glass Shops

(Continued from page 27)

ing the direction of the beams.

The second type of particular interest to car dealers and shop owners is a design which breaks up the light rays as they pass through the unit and diffuse the light evenly through a horizontal plane. These are the blocks which are used in

modern laboratories and precision manufacturing plants where adequate lighting is essential but glare must be avoided at all costs. This light is ideal for the workbench. It can be used at or below eye level. Where the reduction of glare or the control of sunlight is less impor-

tant, any number of designs may be employed to achieve artistic and ornamental effects where light transmission is also desirable.

Among the most important of these secondary uses is in walls to separate the office from the shop, or to bring more light into the recesses of the parts department bins, where separation is necessary and extra light is a godsend.

As internal partitions, the blocks have considerable sound deadening value—a little better than a four inch tile wall plastered on both sides. They are also acceptable as fire retardant walls. Under test at the Underwriter's Laboratories in Chicago, the blocks withstood a 45 minute fire and hose test. Where fire retardant value is of less importance, a prefabricated wooden frame can be used to hold the blocks in the partitions. These frames afford not only ease in construction but also the opportunity of salvaging your blocks and using them to rebuild if you ever desire to shift the partition.

Just as they are relatively successful as insulators against sound, so are they relatively successful as thermal insulators. In winter you have undoubtedly noticed a steamclouded window reducing the already weak winter daylight. This steam means that through your windowpane you are heating the great outdoors. The heat transfer

(Continued on page 82)



It's tune-up time again—the season to check plugs, points, and carburetors. But, don't forget, hot, summer driving has done its *dirty* work inside every motor! That baked-in film of sludge, gum, and varnish must be removed for trouble-free driving this Fall and Winter. Now's the time to get clogged motors set to go—with Marvel Mystery Oil.

Added to crankcase oil, Marvel Mystery Oil gives amazing solvent action combined with outstanding film strength:

Frees lacquered pistons • Cleans clogged rings • Eliminates oil pumping and blowby • Clears pump screens • Purges pressure lines to bearings • Armors all contact surfaces against wear.

And, added to gasoline, Marvel Mystery Oil protects upper cylinder areas with sensational heat resistance:

Purges fuel feed lines • Loosens sticky valves • Dissolves varnish-cemented carbon on walls and valve seats • Resists high heat to better lubricate sizzling top cylinder areas.

It pays to recommend Marvel Mystery Oil for every car you service. . . . THERE'S TWO-WAY reward in it for YOU! First, you make a generous profit from ready sales of this good habit-forming Additive—then, you cash in on steady customer satisfaction bred by Marvel's boost in pickup, pep and power. Get set to go TODAY . . . order money-making Marvel Mystery Oil from your Jobber NOW! Emerol Manufacturing Co., Inc., 242 West 69th St., New York 23, N. Y.

MARVEL MYSTERY OIL



"I can read the bottom row, but the others are blurred."



For Faster Output and Greater Income - Sell this General Motors Product

Built to original equipment specifications, Inlite goes on fast—comes into normal operation immediately and eliminates the need for time-wasting readjustments . . . because it performs the same on the first braking as it does after 10,000 miles.

Furthermore, Inlite gives positive pedal pressure that's right for both men and women drivers. And, every

Inlite segment has the same uniformity of structure—the same long wear

A General Motors Product



**Available Everywhere Through
United Motor Service Distributors**

factor—for straight-line stops over a longer life. So, for satisfied customers . . . for faster output and greater income, order Inlite from your jobber today.

**INLAND MANUFACTURING
DIVISION**

*General Motors Corporation
Dayton, Ohio*

★ INLITE ★

BRAKE LININGS



Glass Shops

(Continued from page 80)

value of a pane of glass is high. Because a glass block is a hollow unit with a dead air space, it has more than twice the insulating value of window glass. In summer it keeps heat out; in winter it keeps heat in. It does not steam up. You are not heating the great outdoors.

Along with the insulation value

of the glass block itself, an equally important advantage is that when it is properly installed there is little infiltration of air. That means there is less dirt, less dust and no drafts. There is also no chance of stormy weather and a window inadvertently left open over the workbench harming valuable equipment.

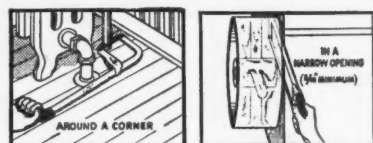
But of all the advantages of glass block construction around a repair shop or service station, perhaps the greatest is the ease of maintenance.

No matter what is spattered on it—dirt, grease, or paint—simply wipe down the wall with the proper solvent. The glass remains exactly as it was when new, still shining, still letting light pour through. Ordinary maintenance costs are held to the price of elbow grease and whatever wets the rag. Long period maintenance costs are also low. Glass stands the weather perfectly. It does not easily gouge or nick, and it does not need refinishing. If a block is ever broken, an occurrence which is rare in shops which already are using glass walls, it can be removed and replaced. There is no exposed steel; there is no exposed wood. There is nothing to rot or corrode.

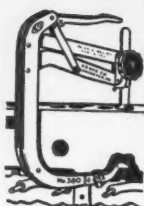
But glass block is not the solution to all building problems. It was developed as an improvement on existing industrial window construction. And as an alternative for windows, it is admirable. It cannot be used, however, to supply structural strength. You cannot erect a pure glass column to support your roof or your upper stories. You cannot simply build a wall of glass blocks bound lightly together. Although in laboratory test, glass block panels proved entirely satisfactory under pressure corresponding to a 115 m.p.h. gale and failed only under a wind of 174 m.p.h., these test panels, roughly seven feet by nine feet, were adequately anchored at the edges. The block weighs approximately 17 lbs. per square foot so ordinary construction handles the weight easily.

(Continued on page 86)

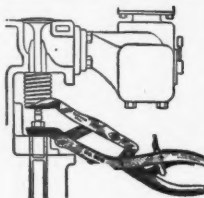
TOOLS THAT MAKE SERVICE JOBS PAY



Improved K-D 99 CONVERTIBLE SAW FRAME saws around corners and in narrow openings. New locking device features quick blade changes, assures correct tension. Frame takes 3", 4½", 6", 10", 12" blades. One 3", one 12" blade furnished. All steel frame, no loose parts. Extremely useful on all kinds of jobs. At your Jobber's.



K-D 380 VALVE SPRING COMPRESSOR—fastest one man tool of its kind, really puts profit in the job. Rugged steel construction, two pairs adjustable jaws. Services nearly all L- and valve-in-head motors, old and new. Easy to use. Get K-D's 380 from your Jobber.



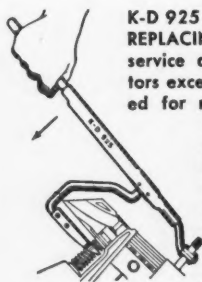
K-D 900 "HI-OFFSET" VALVE SPRING LIFTER—for hard "under fender" jobs on late models. Designed for low cover plate openings and low hung manifolds. Only 8¾" long. Exclusive auxiliary jaws. 3" parallel lift. Tempered jaws adjustable.



K-D 245 BAR TYPE VALVE SPRING LIFTER. To be used only for replacing assemblies on Ford V-8 and Mercury motors. Strong, double life tool of drop forged chrome vanadium steel. 30" long, jaws alike at each end. Takes the headaches out of tough jobs, makes 'em pay. See it at your Jobber's.



K-D 875 PISTON RINGER. Saves rings and fingers, assures perfect alignment. Removes, installs diagonal, step- or straight cut rings up to 4" diameter. Handy pocket size, designed for long service. Makes a hard job easy. Jobbers stock them.



K-D 925 VALVE ASSEMBLY REPLACING TOOL will service all Ford-built motors except 60 HP. Designed for motors where bar type lifters can't be used. Well built, strong channel construction. Adjustable length handle. NOT TO BE USED for removing assemblies! Pays its way—see it at your Jobber's.

K-D TOOLS



K-D MFG. COMPANY
Lancaster, Pa., Hamilton, Ont.



"Let's walk out on 42nd St. and throw a scare into the street cleaners."

1st COMES CLEAN PARTS



THEN THE Repair Work

Circo Chief DEGREASER



There's a Circo parts cleaning unit to fit your particular requirements. Our representative will gladly call and discuss your cleaning problems, just drop a note to-day, you'll be under no obligation whatever.

It is a well known fact that mechanics can and will do a better repair job, faster, if they start off with clean, dry parts. First comes first and in repair work clean, dry parts are the first essential to better work and greater volume.

The Circo "Chief" degreaser was designed, engineered and built to clean and dry, greasy parts faster, easier more thoroughly and more economically than any other method and it does just that. It keeps mechanics supplied on the minute with clean, dry parts and never permits bottlenecks to develop in repair work due to slow, sloppy parts cleaning. The Circo "Chief" degreaser automatically hot vapor cleans and dries dirty, greasy parts in three minutes requiring no attention whatever from the mechanic other than putting parts in the unit. Without any changes or adjustments it cleans parts five different ways: vapor cleaning (automatic) drying (automatic) spraying (automatic) dipping and soaking.

CIRCO Products CO.
2835 CHESTER AVE. • CLEVELAND 14, OHIO

Here's a Sales Builder

TRA NEWS EXTRA

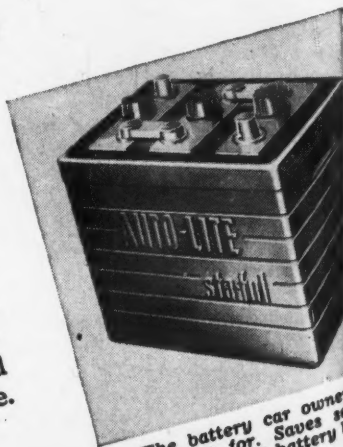
BATTERY NEEDS WATER ONLY 3 TIMES A YEAR

IN NORMAL CAR USE



Lasts Longer, Too!

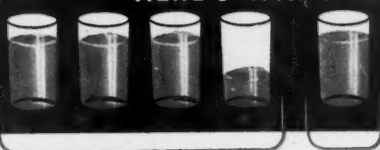
The Auto-Lite "Sta-ful" Battery with its great, revolutionary new feature gives you a leader that will build traffic, volume and profits. Use this amazing new battery to win friends, build sales all along the line.



The battery car owner is waiting for. Saves and protect battery U

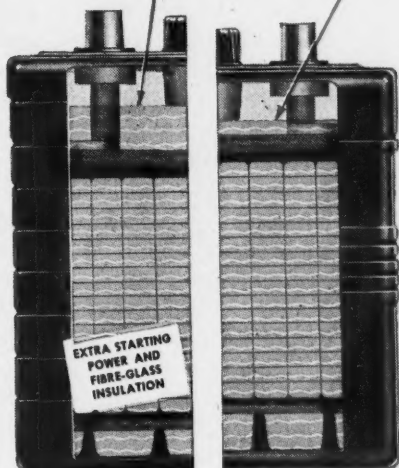
AUTO-LITE

HERE'S WHAT MAKES THE DIFFERENCE



Unique new design and construction gives Auto-Lite "Sta-ful" more than 3 times the liquid reserve of ordinary batteries.

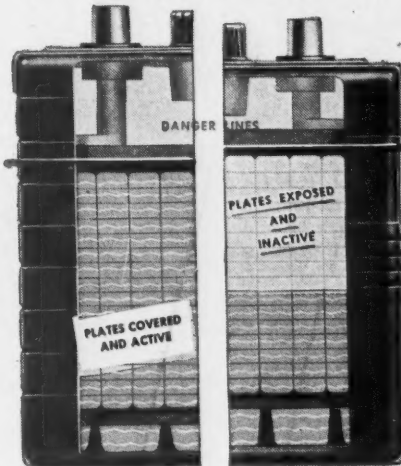
Both Batteries Filled



Auto-Lite "Sta-ful"

Ordinary Type

Liquid Level After Equal Evaporation



Auto-Lite "Sta-ful"

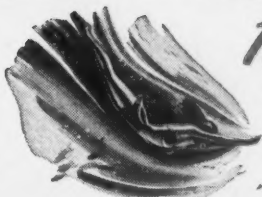
Ordinary Type

Illustrations above show the result of equal evaporation in the Auto-Lite "Sta-ful" Battery and other batteries. As shown by illustration on the far right, plates of ordinary batteries are exposed sooner by water loss and then become inactive faster.

Here's the new battery that needs water only three times a year in normal car use. Think how the revolutionary "Sta-ful" principle will make car-owners talk, look and buy. You have less troublesome service work and "Sta-ful" long life and full power win friends for you, boost sales all along the line. Remember, Auto-Lite also gives oversize electrical capacity plus Fibre-glass insulation to deliver longer life than batteries without the Auto-Lite "Sta-ful" features.

Submerged...

Plates stay wet longer because the "Sta-ful" Battery has more than 3 times the liquid reserve to help deliver capacity starting power, longer life.



Parched and Dry...

Plates of ordinary batteries are exposed sooner by water loss . . . lose power faster because their liquid reserve is less than one-third that of "Sta-ful" Batteries.



A GREAT BATTERY BACKED BY GREAT PROMOTION
Sign up with Auto-Lite and get advertising in leading national magazines and farm papers, backing from big-time network radio show, free seasonal promotional kits, original equipment benefits. Ask your jobber or write

AUTO-LITE BATTERY CORPORATION TOLEDO 1, OHIO

Manufacturing Plants at: Niagara Falls • Indianapolis • Atlanta • Oakland • Oklahoma City • Toronto

Tune in the AUTO-LITE

RADIO SHOW Starring

Dick Haymes

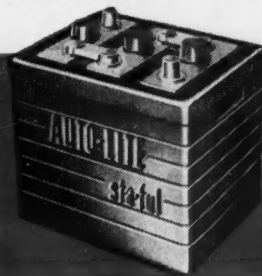


HELEN FORREST, GORDON JENKINS'
ORCHESTRA AND CHORUS

Thurs., 9:00 p. m. E. T., CBS

BATTERIES

THE ORIGINAL EQUIPMENT LINE



Refinishing Station Wagons

(Continued from page 29)

special chemical varnish remover. This material contains no wax, is non-inflammable and has no odor. It is brushed on the body and allowed to stand then washed off with warm water under pressure. If necessary steel wool is used to assist the remover. If any wax is left on the body, the varnish will not dry at all, and the whole thing will have to be reworked. It is im-

portant therefore that all wax be removed and when in doubt the body should be gone over again using steel wool and turpentine. After all varnish and wax are removed and the body is again dry, it should be rubbed down with No. 0 or No. 00 sandpaper.

Stains are now removed with oxalic acid as a bleach and rubber gloves so you still have your hands

when the job is done. Brush the bleach on, being careful to avoid runs as they may streak the wood. The bleach is left on over night and more is put on next day. This second coat of bleach will work visible wonders as it goes on. There are two schools of thought on whether it is needful to wash off the bleach, some holding that it should be neutralized and others believing that the dry acidic coating is an advantage. Anyhow when the body is again dry, it should be sanded to remove the raised grain. The cracks and crannies of the body should be scraped clean with a dagger or bayonet or an old hacksaw blade if that is more convenient. If the joints are loose, they can be filled in with plastic resin glue and clamped until dry.

Station wagon bodies are made of maple or ash uprights and braces with plywood or maple, ash, or california baywood for the panels. In addition walnut or mahogany veneer, three or four layers thick, is sometimes used for the panels. When it is necessary to replace a piece, the joint ends should be coated with a mixture of lead paste and linseed oil called leaden oil, this effectively seals them against moisture and, since it is hidden in the joint, does not affect the appearance of the body.

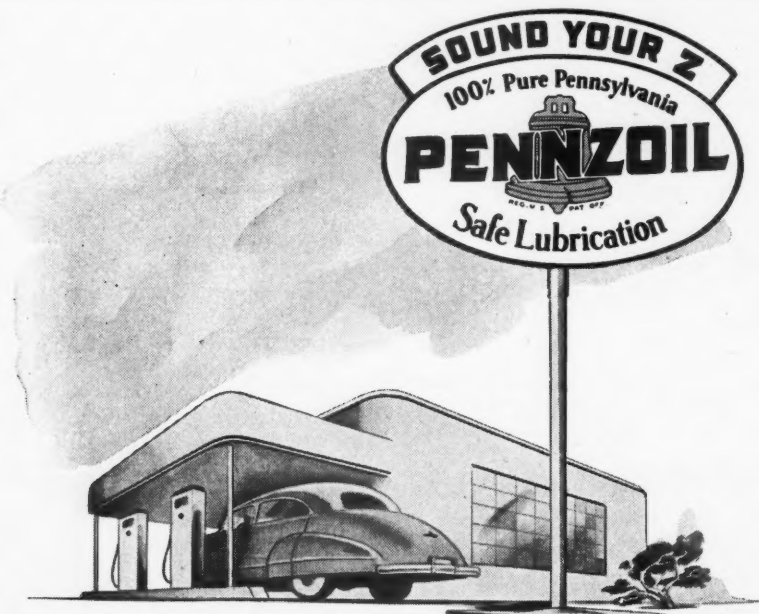
With the wagon all clean, varnishless and dry, it is painted over with wood filler sometimes called wood preservative. This stuff comes clear or colored to match the wood

(Continued on page 90)

Glass Shops

(Continued from page 82)

You can insert in your present building or in your drawing-board dream panels of glass block which will increase the efficiency of your lighting system and beautify your building. The panel construction is acceptable under the building codes of any district, but you should of course check the code in your own section for details, as there is variation throughout the country. At the present time glass block, like all building materials, is in short supply, but it too will eventually be available once again.



What's different about the man who drives in at this sign?

People are different . . . and so are signs in front of service stations. And each sign attracts a different type of customer.

The famous Pennzoil oval stands for quality. It attracts customers who want quality—not only in Pennzoil Motor Oil and Lubricants, but in all the other services and merchandise you have to offer. Quality customers are satisfied customers . . . the steady customers that come back again and again for more.

Years of consistent advertising and merchandising make the Pennzoil sign a standard of quality and a familiar sight from coast to coast. This immediately identifies you with the quality-buying people in your community—the best people with whom to do business.

Let the Pennzoil oval build a permanent list of steady, more profitable customers for you. Get in touch with your Pennzoil distributor . . . or write to us for his name.

Sound your "Z"
PENNZOIL



THE PENNZOIL COMPANY • Executive Offices • OIL CITY, PA.

*Trade-mark Registered

Member Penn Grade Crude Oil Ass'n. Permit No. 2

PENNZOIL* MOTOR OIL & LUBRICANTS

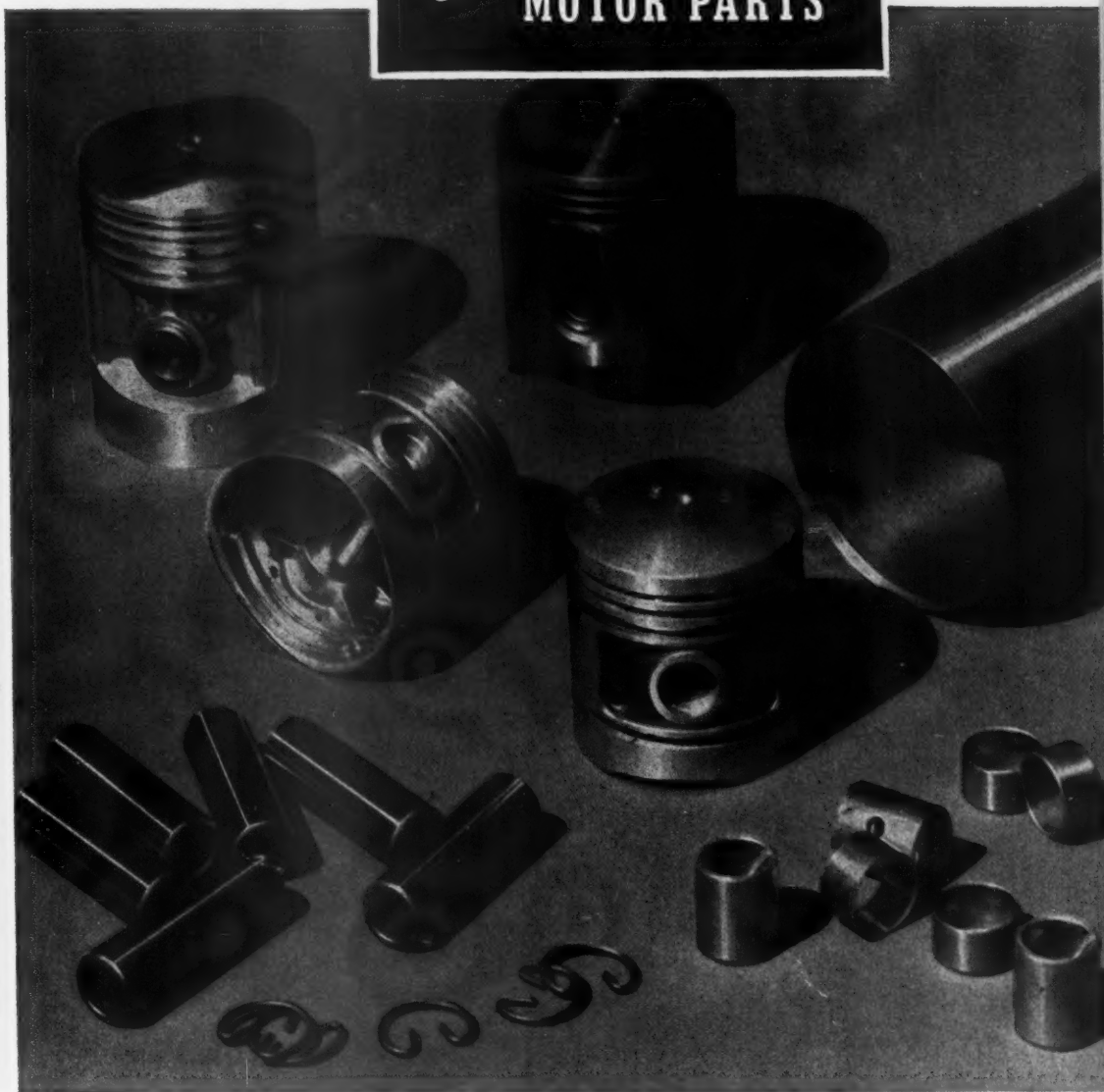
When the Motor is Down ...

Build it Up with

Allied MOTOR PARTS

Pistons • Piston Pins
Piston Pin Bushings
Piston Pin Set Screws
Piston Pin Lock Rings
Valves • Valve Keys
Valve Guides
Valve Springs
Expansion Plugs
Cylinder Sleeves
Cylinder Sleeve
Assemblies
Water Pumps
Water Pump Parts
and Packing

Allied Pistons and all related parts follow factory specifications in design. Pistons, for instance, include split-skirt, aluminum, Auto-Thermic, carb head, T-slot, U-slot and other types used as original equipment.



ALLIED ACCURACY enables you to do
the job faster . . . makes a better and
longer-lasting motor for the owner.

• Allied Accuracy is the faithful embodiment—in every detail from metal analysis to finished product—of the specifications which automotive

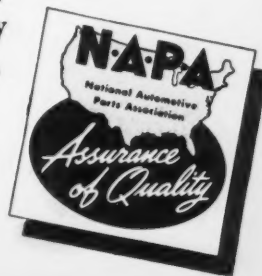
engineering knowledge and long experience dictate for maximum efficiency and life.

The production facilities and manufacturing capacity of the plants producing Allied Motor Parts are unsurpassed in this industry.

Allied can be relied upon to supply you with motor parts which equal, or better, the parts they replace.

ALLIED MOTOR PARTS COMPANY • Detroit 1, Michigan

Allied Motor Parts are quickly available from NAPA Jobbers everywhere. Master stocks maintained in 38 NAPA Warehouses



THE VISUAL FRONT—

for beauty that's more than skin deep!

Good-looking . . . yes . . . but the main beauty of a Visual Front is the way it leads the eye *through* the front to your display of automobiles.

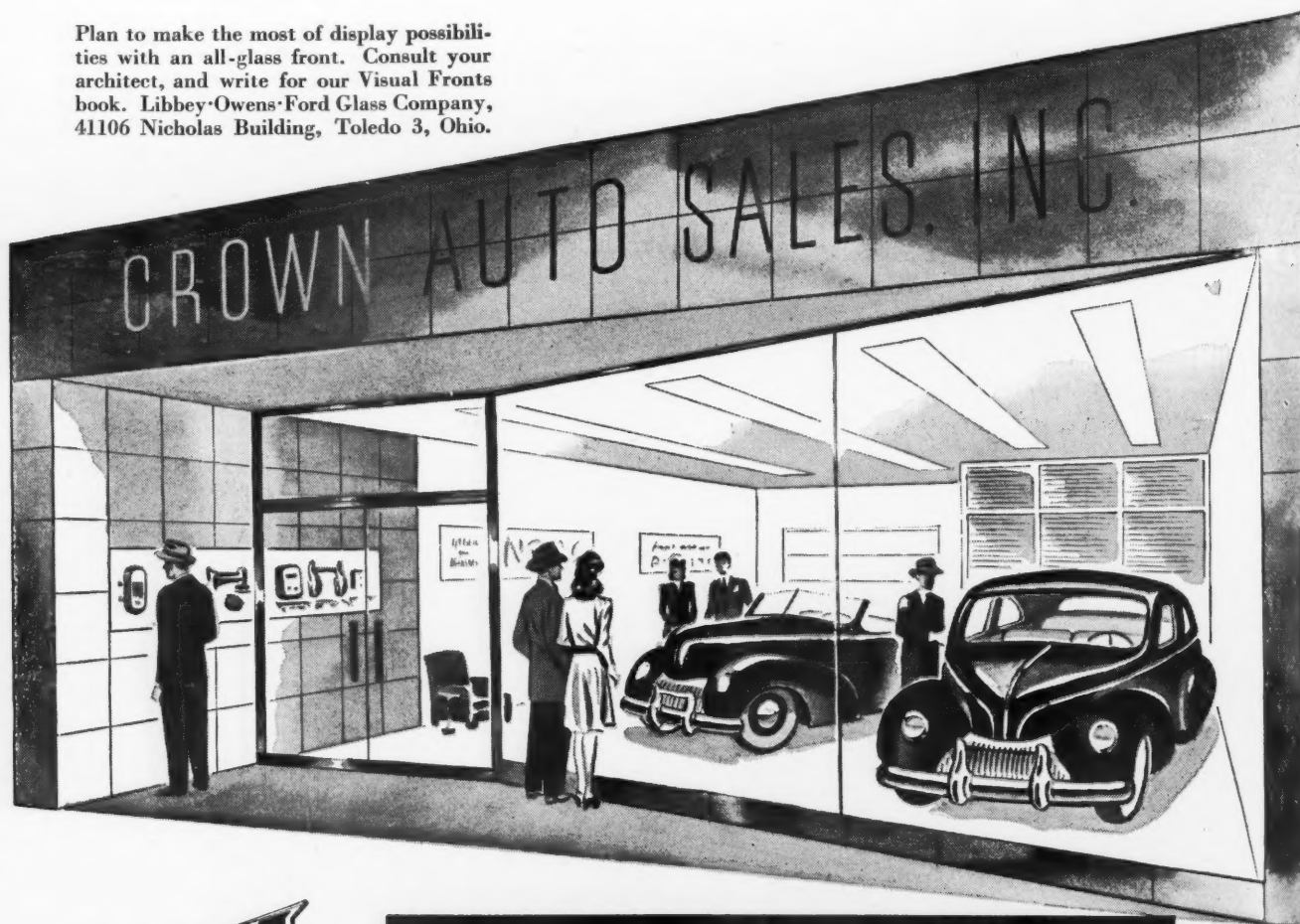
Visual barriers are reduced to a minimum—the colors and appealing lines of your cars are in full view to passersby.

The Visual Front employs many characteristics of glass to attract attention *and* business. Transparency, through large, clear windows and glass doors . . . color, with lustrous *Vitrolite** glass facing on bulkheads and pilasters. Within the store, privacy is provided for offices by partitions of Blue Ridge patterned glass which "borrows" light and creates a pleasing architectural effect.

The Visual Front is easy to maintain—for glass has remarkable resistance to sun and rain. It's easy to keep smart, clean and new looking, year after year.

*Reg. U.S. Pat. Off.

Plan to make the most of display possibilities with an all-glass front. Consult your architect, and write for our Visual Fronts book. Libbey-Owens-Ford Glass Company, 41106 Nicholas Building, Toledo 3, Ohio.



LIBBEY • OWENS • FORD
a Great Name in **GLASS**

Fleet Maintenance

(Continued from page 78)

During the day, the parts department personnel consists of three men. At night, one man handles the job, besides answering the phone and maintaining a general supervision over the shop.

One of the more important reasons for Collins' success in dealing with fleet owners is his understanding of their point of view. He knows that their main fleet-management objectives are minimum loss of use and minimum upkeep cost. He, therefore, conducts his own operation with that idea in mind.

He and Dickerson circulate around the shop, constantly, to see that the various jobs are progressing as they should. In order to obtain maximum "production" from his working force, Collins pays his mechanical and body men on a "commission" basis. They receive 50% of the labor charge on each operation performed. And that system, according to the writer's observation, produces peak results. There seems to be little or no "lost time" on or between jobs.

Besides being profitable in its own right, fleet maintenance pays off in other ways. For one thing, many of the fleet owners' personnel have cars of their own. Since the companies they work for obtain satisfactory results by giving their

automotive work to Collins Garage, there is a natural tendency for them to do likewise.

The advertisement is run two or three times a week. This "special," according to Collins, not only pays its own way, but also serves as a "feeder." Usually, a car's ignition system or carburetor or both have to be overhauled, and frequently other needed work is discovered. Consequently, total billing averages \$25 per tune-up customer and often runs much higher.

Air Filter Booklet

Draco Industrial Corp., 29 Broadway, New York 6, N. Y., has available a booklet on filters, their design and uses. While describing the company's line of filters and giving examples of their application it also gives some of the theory behind the design of the fin-like gauze and screen filter medium. Methods of testing filters are described and both automotive, industrial and air conditioning filters are discussed.



SI-EN-TIF-IK MOTOR RECONDITIONER

Si-en-tif-ik Motor Reconditioner will call to see you one of these days. Invite him in. He is bred in one of America's great laboratories, finished from the finest materials. He is nationally renowned for the amazing job he has been doing on cars, trucks and tractors from coast to coast. He will have interesting stories to tell you of his new approach to the problem of carbon, sludge and motor varnishes. He will be glad to show you a demonstration no other product can make. You will recognize him by his traditional red label bearing the proud name of SI-EN-TIF-IK—a name that means guaranteed quality. So when quality comes calling, invite him in. You will learn how his long profit margin means good business for you and how his honest claims and real performance insures repeats.

DISTRIBUTORS: Some territories are still open for this rapidly expanding line—Including Motor Reconditioner, Penetrating Oil, Brake Fluid, Metal Polish, Anti-Freeze and others. Exclusive contract. Write for further information.

SI-EN-TIF-IK is Sold on a Money Back Guarantee



SI-EN-TIF-IK PRODUCTS CO.

2301 So. LaSalle Street • Chicago 16, Ill.



Station Wagons

(Continued from page 86)

and is applied so that all the cracks and crannies as well as the panels and posts are covered with it, then it is wiped off with a rag. Allow plenty of time for the portion of the preservative remaining on the body to dry. Any visible cracks or holes should be filled in at this point. Use a special hard wax that comes in sticks like sealing wax

and is colored to match the kind of wood and is melted for use over a candle.

Painters of old used to start brushing on the varnish at this point, but it is better to spray it on. If using a four hour varnish allow from thirty-six to forty-eight hours for it to dry. Then rub it down with No. 320 wet-or-dry paper and when the body is again dry, spray on another coat of varnish and rub some more. If the customer is rich or the climate is

damp, a third coat of varnish is an advantage. When another couple of days have gone by and the car is again dry, spray the body with clear synthetic enamel.

When this has dried the car is ready to be delivered. If the metal-work needs refinishing be sure no lacquer gets on the varnish else it will curl and the whole thing will have to be redone. As can be noted, refinishing a station wagon is quite a job and should make for lots of well earned money. If the customer would like to have the affair waxed most refinishers try to talk him out of it, for they say the wax does the synthetic enamel no good and when refinishing time comes around again all that wax will have to be removed at great expense to the customer and great effort by the operator.

In places where the sun shines too much, if such there be, the top of the car can benefit from a couple of coats of aluminum paint. This will reflect the sun instead of absorbing it and will add a lot to the comfort of the car's occupants. The condition of the top is very important as any leaks in it will permit water to rot the top edges of the body. If refinishing the top in the same color as the metal work use lacquer to which 1 ounce of castor oil has been added for each quart used. Apply two coats allowing time for drying between coats.

Central Mike Says:
**LARGEST SELLING MICROMETERS
IN THE AUTOMOTIVE FIELD
THROUGHOUT THE WORLD!**



SET NO. 808 \$12.00
INSIDE MICROMETERS
Range 1½ to 8 inches.
Complete with Extension Handle
and DeLuxe Plush-Lined Case

SET NO. 745 RL \$46.50
OUTSIDE MICROMETERS
Range 0 to 4 inches.
Complete with Ratchet Stops, Lock
Nuts, Standard Test Gauges and
DeLuxe Hinged Plush-Lined Case



CENTRAL
Certified Accuracy
MICROMETERS

**EVERY MECHANIC NEEDS
THESE TWO SETS!**



WRITE FOR CATALOG NO. 17
The entire line of individual
micrometers and sets fully
illustrated.

THE CENTRAL TOOL CO.,



AUBURN, RHODE ISLAND



Practically ALL Makes of Cars, Trucks and Buses Can Be Serviced with

WAGNER LOCKHEED Hydraulic Brake PARTS, KITS, ASSORTMENTS and FLUID



... And as for
BRAKE LINING
there's none better than

**Wagner
CoMaX**

Easy on drums... wears
slowly... uniform...
grips silently... Does
not compress or swell.
Ask for Catalog BU-128
for complete informa-
tion on this outstanding
brake lining. H46-15

A Wagner jobber near you handles everything required for complete hydraulic brake service: parts, fluid, kits, service tools, etc. For complete details, ask your jobber for a Hydraulic Brake Parts and Fluid Catalog HU-122, or address your request to Wagner Electric Corporation, 6498 Plymouth Ave., St. Louis 14, Mo., U. S. A.

Wagner WE Electric
LOCKHEED HYDRAULIC BRAKE PARTS AND
FLUID... NoRoL... CoMaX BRAKE LINING
AIR BRAKES...TACHOGRAPHS...ELECTRIC MO-
TORS...TRANSFORMERS...INDUSTRIAL BRAKES

Remember: "BRAKE FLUID SHOULD BE CHECKED TWICE A YEAR"

Battery and How It Operates

(Continued from page 31)

After application of the pastes and curing, the plates are lead burned in one corner to a plate strap as shown in Fig. 4 to make a plate group. After the positive plate group and negative plate group are thus assembled, the two groups are interlaced as shown in Fig. 5. Separators are placed between the

positive and negative plates to prevent their touching.

Separators may be made of Port Orford cedar, rubber, glass mat or combinations of these. The separators electrically insulate the plates from each other but are porous so as to permit the electrolyte in the battery cells to circulate freely be-

tween the plates. After the positive and negative plate groups are laced together as shown in Fig. 5, they are squared up so that the cover can be put on as shown in Fig. 2. The element is then ready to be placed in the compartment in the battery case to form a complete cell. After the three elements have been put in place, the cell covers are sealed with a special acid-resistant sealing compound and the terminal post and cell connectors are welded into place.

As a final step, the cells are filled with the electrolyte, a mixture of pure water and sulphuric acid, and the battery is charged.

In order to understand the actions that take place in the battery, it will be necessary for us to go into the chemistry of the actions briefly. As we have already mentioned, the electrolyte contains sulphuric acid. The chemical symbol for sulphuric acid is H_2SO_4 . The positive plate contains as active material lead peroxide which has the chemical symbol PbO_2 while the negative plate has sponge lead, or Pb. When the battery is fully charged (specific gravity of about 1.290), the electrolyte consists of about 40 per cent sulphuric acid and about 60 per cent water by weight.

With the above chemical facts in mind, let us now see what takes place in the battery when it is connected into an electrical circuit so

(Continued on page 94)

Save COSTLY MAN HOURS! Speed REPAIR WORK!

Equip FOR SERVICE! Equip TO

CLEAN with STEAM

SIEBRING

STEAM CLEANER

OPERATES Economically!
Burns low cost commercial fuel oil or gas! Electric units also available!

Makes QUICK WORK of Tough Cleaning Jobs! Cuts Grease and Grime in a Hurry!

A big asset in any repair shop or service station! A time and money-saver. ALSO A MONEY-MAKER! The Siebring PORTABLE Steam Cleaner provides instant steam, hot water or a combination of the two UNDER PRESSURE for fast cleaning on the toughest grease and dirt packed jobs. First it knocks loose, then it dissolves and quickly removes hardest packed dirt, grease and grime. Penetrates crevices and corners. Does a BETTER job in HALF THE TIME!

Operates independent of city water pressure or electricity!

Easily moved about!

LOW COST, PORTABLE UNIT for CLEANING

- and WASHING AUTOMOBILES
- AUTO MOTORS
- MOTOR PARTS
- TRUCKS
- TRACTORS
- and OTHER TOUGH JOBS!

10-DAY Free TRIAL OFFER!

YOU RISK NOTHING! . . . Let us put this remarkable automatic steam cleaner in your shop for 10 DAYS' FREE TRIAL. See for yourself how simple it is to operate; how economical, safe and service free! Write for descriptive literature and details of our 10 Day "Free Trial" offer.

SIEBRING MANUFACTURING COMPANY

503 MAIN ST., GEORGE, IOWA



"Oh, Boy! That's better than I ever was."

CALCULATES INSTANTLY —

*with the greatest of ease
protection point of anti-freeze*



**EDELMANN'S
AMAZING NO. 80**

Self-Calculating
FREEZ-D-TECTOR

*Revolutionary —
Completely New!*



TESTS
ZEREX
ALCOHOL
ZERONE
TREK
SUPER-PYRO
"PRESTONE"
Brand
Ethylene
Glycol

Illustration
Approx.
1/2-size

**NO
GUESSWORK!
Your Test is
QUICK
ACCURATE
COMPLETE**

**ORDER FROM
YOUR JOBBER
NOW!**

First fill, refill and radiator
capacities ALWAYS in sight
right on the instrument.

PRICE TO DEALERS **\$5.75**
WORTH MUCH MORE

E. EDELMANN & CO.
2332 LOGAN BLVD., CHICAGO 47, ILL.

Battery Operation

(Continued from page 92)

that it must produce current (upper picture in Fig. 6). When a load is connected to the battery, the sulphuric acid reacts chemically with the active materials in both the positive and negative plates. In doing this, it splits up into two parts. The hydrogen unites with the oxygen in the positive plate to form water. Half of the sulphate

unites with the lead in the positive plate while the other half unites with the lead in the negative plate to form lead sulphate in both plates. Thus, during the discharge process, water appears in the electrolyte while lead sulphate forms in both the positive and negative plates.

After most of the sulphuric acid in the electrolyte has been used up in this manner, most of the lead in the plates will have been converted

into lead sulphate. This means that very little additional chemical action can take place. In other words, the battery is in a discharged condition. The quantity of active materials in the plates, and amount of sulphuric acid in the electrolyte, determines how much electrical current the battery can supply (or battery capacity) before it becomes discharged.

In order to recharge the battery, it must be connected to an external source of current which will force current through it in the reverse direction (lower picture in Fig. 6). Reversing the current in this manner breaks up the water into its constituent parts, hydrogen and oxygen. The oxygen enters the positive plate and unites with the lead to form, once again, lead peroxide and the sulphate leaves both plates to combine with the hydrogen to form sulphuric acid.

It is of interest to keep these reactions in mind, since they help us to understand the limitations of battery operation and various types of battery failure. For instance, the battery can supply current only until most of the sulphuric acid and active plate materials have chemically reacted to form water and lead sulphate. And if, on the other hand, a battery is overcharged, the water will continue to be broken up into hydrogen and oxygen even though there is no more lead in the positive plate or sulphate in both plates for them to combine with. This causes the battery to gas, since the hydrogen and oxygen bubble out of the electrolyte and escape. However, part of the oxygen continues to gather at the positive plate where it begins to unite with the lead in the grid structures of the plates. As a result of this chemical action, the grids begin to swell so that the positive plates warp, buckle, crumble and, finally, short across to the negative plates so that the battery finally fails. We will discuss this further in a subsequent article when we examine various types of battery failure.

Next month, we will discuss battery checks, and how to analyze the condition of the battery.

For Low Cost Acetylene



...give me a *Sight Feed*



- Sight Feed Acetylene Generators make you independent of an outside source of supply for acetylene—generates the acetylene you need, as you use it, in your shop or factory.
- Sight Feed Acetylene Generators keep you from running out of acetylene and losing heat on the middle of a job—you see the carbide charge in the hopper and you know you have enough before you start.
- Sight Feed Acetylene Generators soon pay for themselves—and pay you extra profits for years—as you save from 50% to 75% over the cost of "bottled" acetylene.
- Stop at your jobber's store and get the facts or write for catalog 44-G.

ACETYLENE GENERATORS
FLOODLIGHTS • FLARELIGHTS



ACETYLENE
Sight Feed
GENERATORS

THE SIGHT FEED GENERATOR COMPANY

RICHMOND, INDIANA

FIRST-
CUT LOOSE WITH SAW

THEN - PEEL PIPE AWAY



THE TOUGH SPOTS

ALL-ANGLE STEEL SAW

PIPE PEELER

MAREMONT MUFFLER
REMOVING TOOLS MAKE
RUSTED ONES EASY !

MAREMONT MUFFLER REMOVAL AND INSTALLATION KIT

With this handy kit, you can handle your muffler removal and installation jobs more quickly, easily and profitably... PIPE PEELER peels back narrow strip, breaking rust tight connection in a few seconds... ALL ANGLE STEEL SAW quickly cuts pipe or muffler tube. This kit is available to dealers at no extra cost. So, see your distributor today about obtaining this useful kit... The modern, easy way of muffler removal and installation.

Also manufacturers of Tail Pipes, Exhaust
Pipes and Alloy Steel Springs



SINCE
1877

MAREMONT

MUFFLERS

Maremont Automotive Products, Inc.
General Offices: • South Ashland at
16th Street • Chicago 8, Illinois

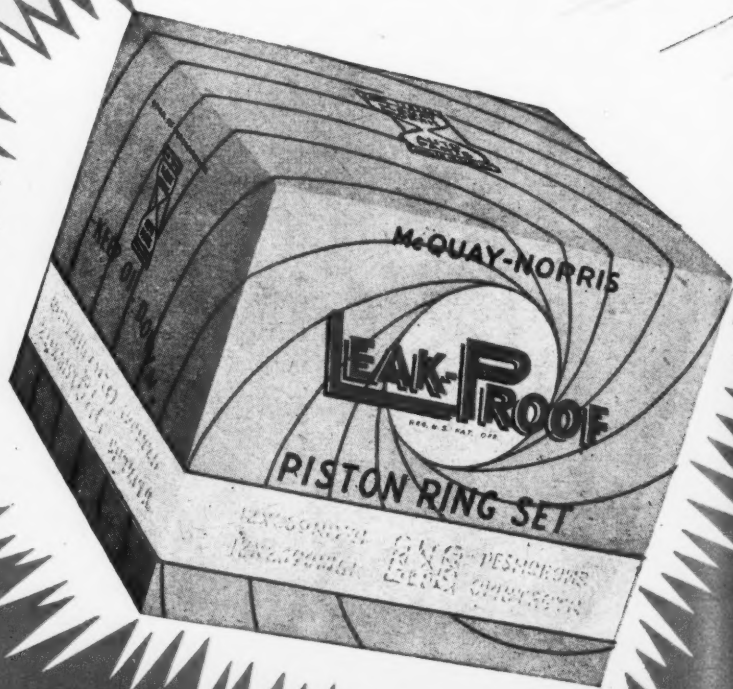
SMASHING

LEAK-PROOF

REG. U. S. PAT. OFF.

PISTON RINGS

Orders for **LEAK-PROOF** Piston Rings have reached amazing proportions, surpassing even McQuay-Norris' greatest expectations. Never before has a set of rings proved so satisfactory. Never before has such a development by McQuay-Norris so completely captured the trade.



A POST WAR DEVELOPMENT OF McQUAY-NORRIS

ALL RECORDS

NEW

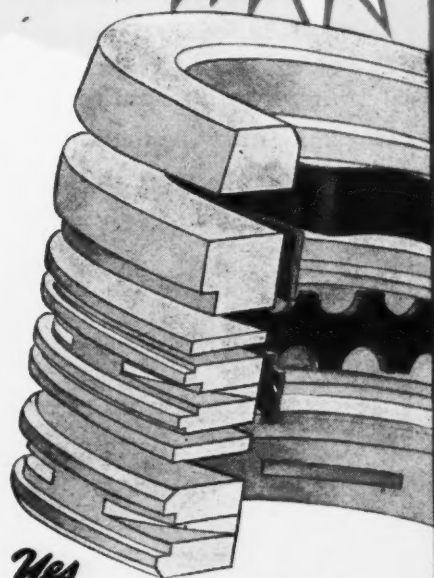
POSTWAR

GUARANTEED

HERE'S WHY...

LEAK-PROOF PISTON RINGS are especially designed to do a complete job—to help each other—to work together perfectly!

LEAK-PROOF PISTON RINGS are a new development—a new idea—a better way to make old motors really get up and GO!



GUARANTEED

TO DO ALL FOUR

- | | | | | | | | |
|----------|-------------|----------|--------------|----------|--------------------|----------|---------------|
| 1 | KEEP | 2 | KEEP | 3 | GIVE SMOOTH | 4 | GIVE |
| | OIL | | POWER | | NEW MOTOR | | LONGER |
| | DOWN | | UP | | OPERATION | | LIFE |

Yes
GUARANTEED

...guaranteed to give satisfactory performance for 10,000 miles or one year, whichever shall occur first, under the McQuay-Norris LEAK-PROOF Piston Ring Replacement and Labor Guarantee available upon request.

MANUFACTURING CO. ST. LOUIS 10, MO. U.S.A.

HERE'S THE WORLD'S SHORTEST SALES TALK



Look at the Condition of Your Oil

Only Clean Oil is Safe Oil

Dirty Oil Clogs Your Engine

AC OIL FILTER Keep Oil Clean

AC OIL FILTERS

AC

OIL FILTERS

One look at the oil smear on an AC Oil Test Pad tells a customer why he needs an AC Oil Filter or Element—shows him the dirt and grit that clog ring slots and valve stems, waste power and hasten repair bills.

That's why you should test engine oil every time you check it. Just wipe the dipstick on an AC Oil Test Pad, instead of on a rag. Then show the smear to your customer.

Every Official AC Oil Filter Service Station is supplied on request with AC Oil Test Pads. If you are registered, keep a supply of Test Pads on hand. If you are not registered, sign up now through your AC wholesaler, stock AC Filters and Elements, and these Test Pads will be sent to you.

SEND FOR AC SHOP MANUALS MA-10

Field Service Department, AC Spark Plug Division, General Motors Corp.
910 Mott Foundation Building, Flint 3, Michigan

Gentlemen: Please send at once, no charge, the AC Shop Manuals checked:

<input type="checkbox"/> How to Service Spark Plugs	<input type="checkbox"/> How to Service Fuel Pumps
<input type="checkbox"/> How to Service Spark Plug Cleaner	<input type="checkbox"/> How to Service Air Cleaners
<input type="checkbox"/> HOW TO SERVICE OIL FILTERS	<input type="checkbox"/> How to Service Speedometers
<input type="checkbox"/> How to Service Ammeters and other Instruments	

NAME _____

FIRM _____

STREET ADDRESS _____

CITY _____ STATE _____

No Cars But Lots of Coffee

(Continued from page 37)

the men make the coffee and serve themselves. This is time consuming and inefficient and where possible should not be permitted.

Gibbons has Larry Kreis, a retired Pullman conductor, officiating in the coffee shop. He has four coffee makers and sees that enough coffee is freshly made at all times to take care of peak loads, which is about fourteen employes at a time. In this way, high-paid mechanics can drop in for coffee, drink it and be back at work in a few minutes, instead of spending their special skills brewing themselves a pot of coffee, consuming more time in this manner than in the actual drinking of it.

"There are no restrictions placed on the employes, either as to the amount of time they may spend in the coffee shop, or how many times they may go there daily," explained Gibbons. "It is entirely a matter of their own conscience guiding them." From the 9½-minute average, it is obvious the convenience is not being abused.

As indicated, customers, too, are invited to avail themselves of the coffee shop as a place to relax while waiting for deliveries on service jobs.

"The parts manager may bring a customer into the shop for a cup of

coffee and to talk business in a quiet atmosphere," volunteered Kreis, who enjoys immensely playing host for the dealership. "Or, perhaps, the service manager will bring in a customer, or one of the other department heads."

Five tables, chairs and padded
(Continued on page 100)

New Budd Distributor

The Budd Company recently announced the appointment of Wheel Industries, Inc., as its direct factory distributor in California, Arizona and Nevada for Budd truck, bus and passenger car wheel, hubs, drums and parts. B. J. McNamara, president of Wheel Industries, Inc., will be located at the Los Angeles office, 2600 S. Santa Fe Avenue. Joseph A. Wortman will be manager of the San Francisco branch, at 2700 16th Street.

NOW You Can SELL the Whole SCHRADER Family

Schrader products shown include: Schrader Tire Valve Caps, Schrader Tractor Tire Gauge, Schrader Tire Pressure Gauge, Schrader Truck Tire Gauge, Schrader Tire Valve Cores, and Schrader Tire Valve Caps. Each product is shown in its packaging with a 'Get a new set NOW!' tagline.

Every one of these new Schrader Packages is designed to bring you more profits. Nationally advertised, they urge your customers to buy Schrader Products "to make tires last longer" . . . and to buy them where they "see these identifying displays."

Order "all 7" from your regular supplier for prompt delivery so you can display these products "as advertised."

DISPLAY THESE SILENT SALESMEN FOR FAST TURNOVER!

**STOCK 'EM! DISPLAY 'EM!
SELL 'EM and SELL 'EM AGAIN!**

Schrader
PRODUCTS
CONTROL THE AIR

- Attention getting—3 eye-catching colors
- Picture of the product right on the package
- Have all the elements of a sale right on the package
- Easy to set up
- Put them where they'll show . . . watch your sales increase.

A. SCHRADER'S SON, Brooklyn 17, N. Y.
Division of Scovill Manufacturing Company, Incorporated



"Now I know what makes a marriage go—debt propulsion."

Lots of Coffee

(Continued from page 99)

wall seats are provided in a space 12 by 16 feet in size. Against one wall is built a simple kitchen sink arrangement with work space for coffee makers, while overhead is shelving for cups. Total investment in the coffee shop is about \$1,500.

The coffee shop is being widely publicized in both the house organ, the *Boyd H. Gibbons Wall Street Gazette*, and also in its newspaper

space. Under the head: "No Fords —But Lots of Coffee," one newspaper advertisement says:

"Perhaps we can't give you that new Ford right now, but we can buy you a drink! While you pour out your troubles and tell us how badly you need that new Ford, we'll take you back into our own coffee shop and pour you a drink of java "on the house."

"Some day soon we'll be trying to SELL you a new Ford and we want you to remember how hospi-

tably we treated you when we had nothing to sell.

"Larry Kreis tells us that customers and workers are drinking up 835 cups of coffee a week in the newest "department" of the Boyd H. Gibbons downtown Ford dealership. That's okay with us, because we want our folks to relax and enjoy a rest period.

With modernistic furnishings, music and genial Larry Kreis presiding at the pouring, our workers and customers seem to really enjoy coffee time at the only coffee shop in town without a cash register!"

Here is a detailed break-down of the coffee shop overhead, based on a 26-day month.

6 dozen donuts per day @ \$2.16 per day	\$56.16
12 dozen cup cakes per week @ 2¢ each	12.48
23 pounds of coffee per week @ 34¢ per pound (based on 850 cups—37 cups to the pound)	33.24
12 pounds of sugar per week @ 8¢ a pound	5.10
4 cans milk per day @ 14¢ can	14.56
Salary, per month	108.33
Miscellaneous: Gas, electricity, water (estimated)	10.00
Linen Service	10.00
Total	\$250.67

New Low Priced Car

This Bobbi-Kar convertible sports roadster is one of five models of the new post-war, low-priced Bobbi-Kar automobiles scheduled for January delivery. Measuring 12'8" in length, Bobbi-Kar is powered by a four cylinder auto-aero engine designed to give more than 40 miles per gallon at more than 60 miles per hour. Manufactured by the Bobbi Motor Car Corporation, Birmingham, Ala., it will sell for \$725 to \$875.



TODAY'S MILEAGE-WEARY CARS

NEED THESE 3 UNITED SERVICES.

◆ BRAKE SERVICE

United Hydraulic Kits . . . Master and Wheel Cylinder Kits with Pistons . . . a complete line of individual parts...and famous FLEXITE cables to fit all cars.

FUEL PUMP SERVICE

United's Diaphragm or complete Pump Repair Kits for all cars and trucks.

SPEEDOMETER SERVICE

United's "Necessary Nine" universal cable and casing assemblies handle 95% of all jobs.

◆ Available in handy kit assortments, United parts enable you to provide quick, complete money-making

service on hydraulic brakes, speedometers and fuel pumps. Consult your nearest NAPA Jobber.

UNITED

UNITED PARTS MFG. CO.

1250 W. VAN BUREN STREET, CHICAGO 7

HYDRAULIC BRAKE PARTS

BRAKE CABLES

SPEEDOMETER CABLES

FUEL PUMP PARTS

YOUR OVERHEAD

1939 1940 1941 1942 1943 1944 1945 1946

IS GOING UP!

OFFSET THIS INCREASED COST OF DOING
BUSINESS WITH EXTRA SALES AND GREATER
PROFITS ON...

BLUE CROWN HUSKY



The
Original
Complete Line
with Heavy Duty
Insulators

Controlled Heat Zone SPARK PLUGS

AMERICA'S FINEST SPARK PLUG

- The Massive, oversize construction guarantees extra efficiency.
- The Heavy Duty Insulator is bigger and stronger . . . it will not crack "when the heat is on."
- The Heavy Duty Electrodes are huskier . . . for longer life, with fewer adjustments.
- The Controlled Heat Zone insures uniform operation. It provides a definite path for controlled heat dissipation.

BLUE CROWN DEALERS
SELL MORE SPARK PLUGS . . .
MAKE MORE PROFIT PER PLUG

Dealers sell more BLUE CROWN "HUSKIES" because they are easier to sell . . . have more talking points, more important features . . . give better and longer service . . . make friends who tell others. The controlled heat zone, electrode expansion space, "waist" threading and cementing of electrode are exclusive advantages obtainable only in "Huskies."

In addition to the strong selling features, the dealer set-up has been carefully worked out to give the dealer a better, fairer profit margin in return for his selling cooperation. At this time of high overhead expense, the extra profit on BLUE CROWNS is welcomed by smart dealers everywhere.

Sold only through Jobbers



DOMESTIC SALES
BLUE CROWN SPARK PLUG CO.
a DIVISION of MOTOR MASTER PRODUCTS CORP.
1800 WINNEMAC AVENUE, CHICAGO 40, ILLINOIS

EXPORT SALES

Borg-Warner International Corp.
CHICAGO 4, ILLINOIS
Cable Address "BORINTGO"
U. S. A.

Automotive Advertisers Council Convenes

(Continued from page 41)

preparation by the Council for over a year and provides detailed information for use by wholesalers and manufacturers in the planning and operation of clinics, meetings, schools and exhibits. It has been based on experiences reported by distributors and manufacturers and will offer extremely valuable infor-

mation never before available in organized form.

"Incentive Plans for Salesmen, Jobbers' Salesmen and Dealers" was the topic of C. C. Tapscott, advertising manager, McQuay-Norris Mfg. Co., and advantages and disadvantages of various types of incentive plans were discussed.

Plans for the Council exhibit in the Automotive Service Industry's Show at Atlantic City were related by George Stout, sales promotion manager, Perfect Circle Co.

Other features of the meeting included a survey of the tractor and implement field and the publications serving this field; a discussion of trade paper relations led by B. Hotvedt; and an open forum in which marketing, budgets and production methods were the chief topics.

T. Faxon Hall, sales promotion manager, Walker Mfg. Co., president of the Council, presided at all of the sessions.

Gillette Promotions

Leonard E. Luse has been promoted to the newly created position of manager, distribution planning and business development. He has served in a number of capacities at Gillette, including that of chief clerk and assistant office manager of the New York branch, territory salesman, and manager of sales and service for the jobber tire sales division. His most recent assignment has been manager of sales operations, Gillette Division, U. S. Rubber Co.

Frank W. Lewis was promoted to the position of merchandise manager, allied products.

John T. Griffith has been promoted to manager of sales operations. Since joining the Gillette division, he has handled the statistical details of the sales operations section.



Double Feature Motor Oil for winter business

Create and hold satisfied customers by recommending AMALIE Sub-Zero for easy starting and smooth engine performance—all winter long. Flows freely when it's cold... yet clings to metal—cold or hot. It's the *oilier* oil!

For Winter

And for all vital lubrication points, remember AMALIE winter-grade lubricants.



SEE YOUR AMALIE DISTRIBUTOR, OR WRITE DEPT. 010

AMALIE DIVISION

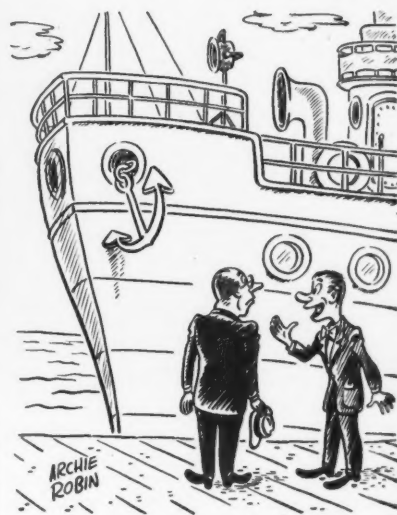
L. SONNEBORN SONS, INC.

88 LEXINGTON AVENUE, NEW YORK 16, N. Y.

Refineries: Petrolia and Franklin, Pa.

Plant: Nutley, N. J.

In the Southwest: Sonneborn Bros., Dallas 1, Texas



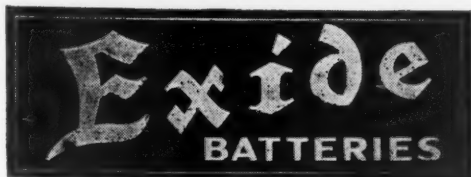
"I can't reduce the price, but I can throw in a couple of oars."



**EXIDE PRODUCTION IS
GOING TO EXIDE DEALERS**

Nationally Advertised to the millions of readers of LIFE, The Saturday Evening Post, Collier's and other big circulation magazines.

**IDENTIFY YOURSELF AS
AN EXIDE DEALER . . .**



Exide dealers are being taken care of first in the distribution of Exide Batteries. Production will go forward as fast as government restrictions are eased . . . will be stepped up quickly when more lead is made available . . . in the meantime all Exide Batteries are being distributed on a fair and equitable basis.

Exide advertising in the great national weeklies and other magazines is repeatedly telling car owners they can "Depend on the Exide dealer for good products, good service" . . . *all* his products . . . *all* his services.

More than ever before, it's good to be an Exide dealer.

THE ELECTRIC STORAGE BATTERY COMPANY

Philadelphia 32

Exide Batteries of Canada, Limited, Toronto

Truck-Trailer Industry Will Exceed Goal of '46

The truck-trailer manufacturing industry this year will exceed an unofficial goal of 60,000 vehicles, thereby setting a peacetime production record for any year in the history of the industry.

Authority for that statement is Julius L. Glick, president of the Truck-Trailer Manufacturers Association, whose forecast released today from association headquar-

ters threw a gleam of optimism into a currently drab automotive production picture.

"The goal of 60,000 units is entirely unofficial but was generally adopted by the industry as its overall aim early this year," Mr. Glick said. "With six-month production figures actually at hand, it now appears certain that the objective will be achieved and surpassed barring drastically changed conditions not presently expected.

"Trailer makers will have hur-

dles to clear, of course, but suppliers of parts and components still assure us they can overcome their own difficulties sufficiently to allow us to produce the indicated number of finished units."

Mr. Glick pointed out that in the first six months of this year, trailer plants produced 32,974 units—almost equal to the 32,987 civilian trailers built in all of 1945. The six-month production, he noted, witnessed an all-time monthly peak of 6691 units for commercial use in April, followed by a near-record output of 6617 units in May.

WAA Speeds Procedure

(Continued from page 41)

end of each two weeks' period, all orders will be carefully reviewed for allocation. All orders from priority claimants shall be sorted into the proper order of priorities.

When needs of all priority groups are satisfied from current availability, normal channels of trade will receive allocations in the following sequence: first, orders from automotive fleet operators, service garages and dealers; second, automotive distributors and manufacturers. If the total quantity ordered is in excess of the final current availability of any item, allocation will be made by satisfying first the smallest orders.

Even a one-man shop must have... a

Kleer-Flo

CARB-U-TATOR
For carbonized parts. Shown attached to KS 30. Air-agitated.

MODEL KS 30
Electrically operated. Compound used over and over. Continuously filtered.

SAYS Practical Dan THE KLEERFLO MAN

No shop can compete in repair prices when time-consuming parts-cleaning, or slower work on dirty parts, must be figured in. The Kleer-Flo process puts parts-cleaning on an efficient basis, lets labor be applied on the profitable part of the job. Savings repay the small investment in a relatively short time.



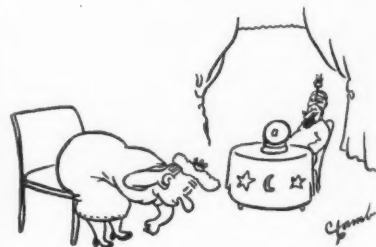
For fast removal of carbon, varnish, gums, from carburetors, pistons, fuel pumps and like parts.

Time now to forget the "bucket and brush" method and install the Kleer-Flo process, employing skilled time for more attractive work, leaving the dirty work to Practical Dan's modern labor-savers and profit-builders.



Powerful, fast, penetrating. Fast-dry, safe. For general parts-cleaning.

Practical Products Company
MANUFACTURERS OF MECHANICAL PARTS CLEANERS, CLEANING COMPOUNDS, KOOL-ANT PUMPS
2632 NICOLLET AVENUE • MINNEAPOLIS 8, MINNESOTA



Two Good Reasons

why the original-equipment leader should be
your first choice in Sealed Beam lighting units

NO DIM-OUT

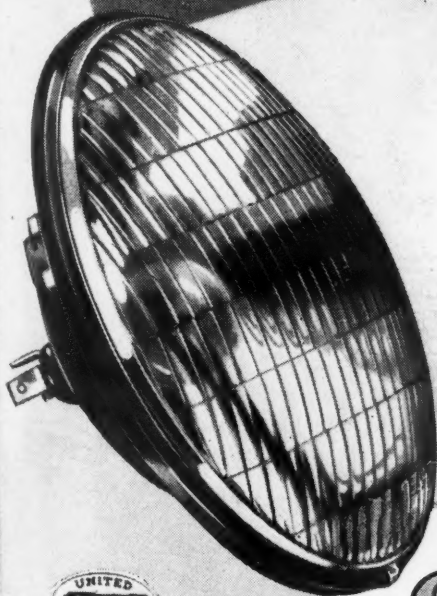
with Guide Sealed Beam units. They are permanently sealed against dust, dirt and traffic film—stay bright throughout their long life. Guide engineering is good engineering.

NO BLACK-OUT

with Guide Sealed Beam units. If a lens is cracked by a stone or blow, the Guide unit does not fail. It continues to light the way safely until the damaged unit can be replaced.

Guide Sealed Beam units are original equipment in more cars, trucks and buses than any other make of Sealed Beam unit. Guide double protection—no dim-out, no black-out—makes Guide units better for replacement, better for original equipment.

Safe Headlamps are "Correctly Aimed" Headlamps
—Check Your Customers' Headlamps Today



GUIDE LAMP
A UNITED MOTORS LINE

Guide Sealed Beam replacement units and Guide lamp service parts are sold by United Motors distributors.

Guide

LAMP

Division of General Motors
Anderson, Indiana

LET SAFETY SHARE THE RIDE
—REPLACE WITH GUIDE

WATCH FOR OUR ADS
IN THE
SATURDAY EVENING
POST



When a manufacturer asks you to "watch
for our ads in the Post," he's calling your
attention to the best kind of local support.

For advertisements in the Post reach your
best customers—the leaders, who are first
to buy the new and better things.

And advertisements in the Post get atten-
tion. For people like to read ads in the
Post—far more than in any other magazine.

THE SATURDAY EVENING
POST

AUTOMOBILE AND AUTOMOTIVE AFTERMARKET ADVERTISERS IN THE SATURDAY EVENING POST

A

A. C. Spark Plug Division,
General Motors Corporation
Allis-Chalmers Manufacturing Company
American Bantam Car Co.
American Chain & Cable Company, Inc.
Anderson Company, The
Armstrong Rubber Company, The
Auburn Spark Plug Co., Inc.

B

Bear Mfg. Co.
Belden Mfg. Co.
Bell Company, Inc., The
Bendix Aviation Corporation
Black & Decker Mfg. Co.
Borg-Warner Corporation
Bowes "Seal Fast" Corporation
Buick Motor Division,
General Motors Corporation
Burgess Battery Company

C

Cadillac Motor Car Division,
General Motors Corporation
Carpenter Manufacturing Company
Casco Products Corp.
Casite Corp., The
Caterpillar Tractor Co.
Champion Spark Plug Company
Chevrolet Motor Division,
General Motors Corporation
Chicago Streamlite Corporation
Chrysler Corporation
Chrysler Division,
Chrysler Corporation
Continental Oil Company
Cushman Motor Works

D

Delco-Remy Division,
General Motors Corporation
De Soto Division,
Chrysler Corporation
Diamond T Motor Car Co.
Dodge Division,
Chrysler Corporation
Donaldson, Inc.
du Pont de Nemours &
Company Incorporated, E. I.

E

Electric Auto-Lite Company, The
Electric Storage Battery Company
Ellinwood Industries

F

Federal-Mogul Service
Division of Federal-Mogul Corporation
Firestone Tire & Rubber Co., The
Fisher Body Division,
General Motors Corporation
Fisk Tire Company, Division of
United States Rubber Company
Ford Motor Company
From Corporation

Fruehauf Trailer Company

G

Galvin Manufacturing Corporation
General Electric Company
General Motors Corporation
General Tire & Rubber Company, The
GMC Truck & Coach Division,
General Motors Corporation
Goodrich Company, The B. F.
Goodyear Tire & Rubber Co., Inc.
Gould Commercial Division,
National Battery Corporation
Grizzly Manufacturing Company
Guide Lamp Division,
General Motors Corporation
Gulf Oil Corporation

H

Hastings Manufacturing Company
Hollingshead Corporation, R. M.
Hollis Company
Hudson Motor Car Co.
Hull Mfg. Co.

I

International Harvester Company

J

Johnson & Son, Inc., S. C.

K

Kaiser-Frazer Corporation.
Graham-Paige Motor Corporation
Karriall Corporation
Kelly-Springfield Tire Company, The
Kendall Refining Company

L

Lee Rubber & Tire Corporation
Lincoln Division,
Ford Motor Company
Lubaid Company
Lyon, Incorporated

M

Macmillan Petroleum Corporation
Mack Trucks, Inc.
McQuay-Norris Mfg. Co.
Mercury Division,
Ford Motor Company
Muskegon Piston Ring Co.

N

Nash Motors, Division of
Nash-Kelvinator Corporation
National Carbon Company Inc.,
Unit of Union Carbide and
Carbon Corporation
New Departure Division,
General Motors Corporation
Noblitt-Sparks Industries, Inc.
Nu-Enamel Corp.

O

Oldsmobile Division,
General Motors Corporation

P

Packard Motor Car Co.
Pennsylvania Grade Crude Oil Association

Pennsylvania Rubber Company
Pennzoil Company, The
Perfect Circle Company, The
Petroleum Solvents Corp.
Phillips Petroleum Company
Plymouth Division,
Chrysler Corporation
Polaroid Corp.
Pontiac Motor Division,
General Motors Corporation
Publicker Industries, Inc.
Pyroil Company

Q

Quaker State Oil Refining Corporation

R

Raybestos, The Division of
Raybestos-Manhattan, Inc.
Ray-O-Vac Company
Reo Motors, Inc.

S

Schrader's Son, A. (Div. of
Scovill Manufacturing Company)
Schult Corporation
Sealed Power Corporation
Seiberling Rubber Company
Shell Oil Company, Inc.
Sherrill Instrument Company
Simoniz Company, The
Simplex Products Corp.
Sinclair Refining Company, Inc.
Socony-Vacuum Oil Company, Inc.
Standard Oil Company of California
Stewart-Warner Corporation
Studebaker Corporation, The

T

Texas Company, The
Tide Water Associated Oil Company
Timken Roller Bearing Company, The
Trico Products Corporation

U

United Motors Service, Division of
General Motors Corporation
United States Asbestos, Division
of Raybestos-Manhattan, Inc.
United States Rubber Company
U. S. Industrial Chemicals, Inc.

W

Wagner Electric Corporation
Walker Manufacturing Company of Wisconsin
Wayne Pump Company, The
Westinghouse Electric Corporation
White Motor Company, The
Willard Storage Battery Company
Willys-Overland Motors, Inc.
Wind Turbine Co.
Wittie Mfg. & Sales Co.
Wolf's Head Oil Refining Company

Z

Zecol, Inc.

Clearing House

(Continued from page 48)

Since then the car has only 10 to 12 lb. oil pressure when the oil is hot, regardless how fast you race the motor. It is a 1939 Chevrolet.

I have installed a new oil distributor valve and line to the rocker arms and the rocker arms don't get any oil yet. I stretched the spring on the distributor valve; still no more oil pressure and no

oil to the rocker arms. I have checked about everything I know of.—An Illinois Subscriber.

ON your 1939 Chevrolet, factory specifications call for 13 lb. oil pressure at 50 m.p.h. and since you get 10 to 12 lb. pressure, it would seem to be satisfactory.

Failure of the oil to reach the rocker arms, probably results from stoppage of the oil line to the rocker arms. This stoppage is probably where the line passes

through the cylinder block. I would recommend that you disconnect this line at both ends and blow it out with air. Of course, you should also be sure that there is no stoppage at any other point in the line.

Hudson Oil Pump

We recently replaced the camshaft and oil pump on a 1940 Hudson Eight. The gear on the camshaft and oil pump had been stripped. Three rod bearings were damaged.

We replaced these parts. Oil pump worked all right for about twenty miles after putting new parts in and then the same trouble occurred; that is, the gear was stripped on the camshaft and oil pump. We want to be sure not to have this trouble again.

Can you tell us what is causing our trouble?—Joe Heishman, 2300 Columbia Pike, Arlington, Va.

I AM very much interested in the trouble you are having with the Hudson car, and I am quite sure the trouble was caused by excessive end play in the camshaft.

I would suggest you install a new camshaft and keep the end play under .005 in. and also check the mesh with the oil pump gear and the camshaft gear with Prussian Blue. Also make a thorough check of your oil pump to make sure it is in good condition and that the pressure release is working satisfactorily.

GOOD NEWS!

THE WILSON "BUSYBEE" NOW READY AND SOON AVAILABLE IN QUANTITY

130 amp. . . . \$146.00* (illust.) 20½" x 12" wide x 17" deep

180 amp. . . . \$166.00*



... A New A. C. Welder—AT LOW COST!

Here it is! An A.C. Welder designed for garages and repair shops operating on rural power lines. Light, well-balanced, rugged, it includes all the improvements and engineering features found in other Wilson welders.

Available in two sizes; 130 amp. and 180 amp., the "Busybee" is easy to operate, low in cost, and can be moved from job to job with ease. It is furnished complete with all accessories — just plug it in, and it's ready to start.

Your nearest Airco sales office or dealer can give you full information about the new "Busybee" — or write Dept. 77-1, Air Reduction, 60 E. 42nd St., New York 17, N. Y. In Texas: Magnolia Airco Gas Products Co., Houston 1, Texas. Ask for Bulletin ADW-77.

WILSON "BUSYBEE"

The NEW A.C. Arc Welder

with the penetrating, stinging arc

EASY TO USE:

Built-in gauge permits positive selection of electrodes.

Only one adjustment — full-view indicator, calibrated in electrode sizes instead of amperes, permits immediate current adjustment.

SAFE TO USE:

Low open-circuit voltage.

Thoroughly insulated with fireproof spunglass.

MEET THESE SPECIFICATIONS:

NEMA rated for limited input welders.

REA specifications for rural power lines.

Approved by Underwriters Laboratories, Inc.

READY TO OPERATE:

Furnished complete, even to face shield, gloves, and 5 lbs. of selected electrodes.

*Prices shown without capacitors. With capacitors, \$156 (130 amp.) and \$182 (180 amp.). Capacitors may be used where necessary; generally not required.



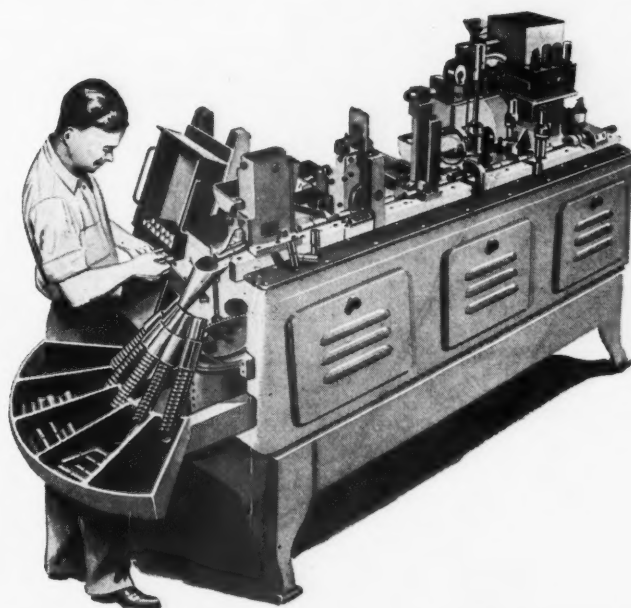
AIR REDUCTION

Offices in All Principal Cities
Plus a Nationwide Dealer Organization



"Gad, for a minute I thought you weren't my wife."

HERE'S ANOTHER REASON WHY...



Genuine Ford Parts *ARE RIGHT FOR FORD CARS!*

This remarkable, Ford-developed piston pin testing machine automatically tests Ford piston pins for size, hardness, smoothness, straightness and roundness—at the rate of 2,250 pins per hour.



ACCURATE TO $25/1,000,000$ INCH \pm
It employs both mechanical and electronic measuring devices and can detect a difference in size as

little as $25/1,000,000$ of an inch . . . thus eliminating the factor of human error and assuring uniformity of parts both in size and composition.

The extreme accuracy represented by this machine is just another reason why Genuine Ford Parts are made right—fit right—last longer. And it is a good reason why Genuine Ford Parts can help your mechanics turn out service jobs faster and do the high quality work that

keeps customers coming back to your shop.

Use Genuine Ford Parts to



increase your profits . . . and to develop customer loyalty which means future business. You'll find your friendly Ford Dealer glad to supply you. See him often for the Genuine Ford Parts you need.



F O R D M O T O R C O M P A N Y



NEW PRODUCTS

(Continued from page 46)

the trade name of "Mototuner."

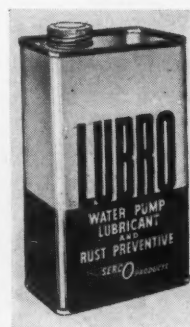
When added to the gasoline tank as specified by the manufacturer it is claimed that it will prevent the freezing of gas lines and fuel tanks.

Piston Pin Groover

Peyton Precision Products Co., 1253 Flower St., Los Angeles, Cal., announces a new tool to cut grooves in Ford piston pin holes for piston pin end lock rings. The grooving

tool comes in two types, one for model "A," and early model "V8." These models used a center lock for the piston pin while later models and factory replacements are of the end lock type. The manufacturer states that this new tool will automatically cut the correct depth and width groove in eight pistons in five minutes. Shops using the tool will only have to stock the latest type pin.

"Lubro" Added to Chemical Line



"Lubro" a water pump lubricant and rust inhibitor, has been added to the line of automotive chemicals manufactured by the Service Supply Co., Denver, Colo.

Designed to stop squeaks in sealed type water pumps, the new product is a soluble oil which is said to give the seals and bearings a protective coating while preventing the formation of rust in the cooling system. It is poured into the cooling system while the motor is running, one pint being sufficient for all motors up to seven gallons capacity.



Air-Operated

Can be attached
to any workbench



Complete with
treadle valve,
hoses, knockout
punch, crimping
punch and anvil.

PORTABLE

MOVE IT
ANYWHERE

A Two-Purpose Machine

Can be used for knocking out rivets or crimping rivets. So low-priced that every garage can now afford to have a riveting machine of its own. Pays for itself in a remarkably short time, and brings in extra profits year after year. Speeds up your work. Does away with the nuisance of sending brake shoes out for relining.

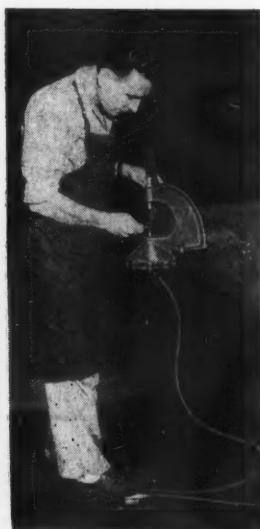
Much Easier to Operate

Its metering-type treadle valve gives operator complete control over the pressure, making it possible to locate the rivet correctly under the crimping punch before applying full pressure. Minimizes spoilage of rivets and eliminates the danger of punches being broken by striking the steel brake shoe.

Only 12 inches high. Weighs only 32 lbs. Occupies only 4 1/2" x 5 1/2" bench space. Portable. Move it anywhere. Takes all sizes of tubular rivets up to No. 10 inclusive.

ASK YOUR JOBBER
Or Write for Literature

POWER BRAKE PARTS MFG. CO.
8060 WHEELER AVE., DETROIT 10, MICH.



"Yes, I know where it is . . . Yes, Yes . . . please lady . . . of course . . . yes . . . yes."

"We're in a Devil of a Fix"

● It's nothing new for the demand for HaDees Heaters to exceed the supply. That has happened repeatedly in the past. But never in our 20 years of hot water heating history have we been in the embarrassing position we now find ourselves. Shortages of materials and labor make it impossible to even come close to filling the orders with which the trade has flooded us. But we ARE doing our best . . . and we HOPE that before too long we'll be making larger shipments of HaDees Heaters.

HaDees Heater Division
BURD PISTON RING CO.
Rockford, Illinois



HaDees
Hot Water Heaters
FREE HEAT
FOR CARS • TRUCKS • BUSES

Legally Speaking

A lawyer's interpretation of federal and local court decisions of interest to repairmen and car dealers

Bad Brakes Legal Negligence

ADEQUATE brakes in good working order are required by law to be maintained on every motor vehicle on the highways of North Carolina. Similar laws have

been enacted in other states.

Commenting on the legal effect of a violation of this law in a recent case, the Supreme Court of North Carolina said:

"It is alleged that the defendant failed in his duty to equip the truck with adequate brakes and to

keep such brakes in good working order in violation of the provisions of statute. This statute requires that every motor vehicle when operated on a highway be equipped with brakes adequate to control the movement of and to stop such vehicle and that such brakes shall be maintained in good working order. A violation of this statute is in itself legal negligence."

In the North Carolina case a man had been killed in a collision with the truck whose brakes were alleged to be bad. However, the court pointed out that the existence of defective brakes would not make the truck driver or owner liable for the death unless the bad brakes were a cause of the accident.

"A violation of the statute requiring adequate brakes must be a proximate cause of the injury in order to become actionable. In the absence of evidence as to the nearness of the truck to the deceased when he entered the highway, no reasonable inference may be drawn from the attendant circumstances as to the condition of the brakes on the truck." (Tysinger vs. Coble Dairy Products, 36 Southeastern Reporter, second series, 246.)

Selling to Married Women

WHEN a repairman sells to a married woman and charges the transaction to her husband's (Continued on page 116)



**JOHNSON
BRONZE**

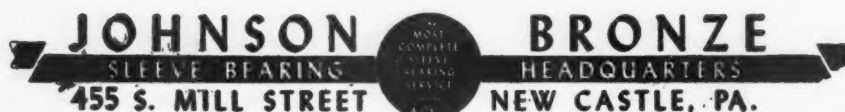
*Excellent
Delivery*

New and enlarged facilities plus the return of many of our skilled employees from the services means more bearings for you. Now you can get excellent delivery, particularly on our F-B Series.

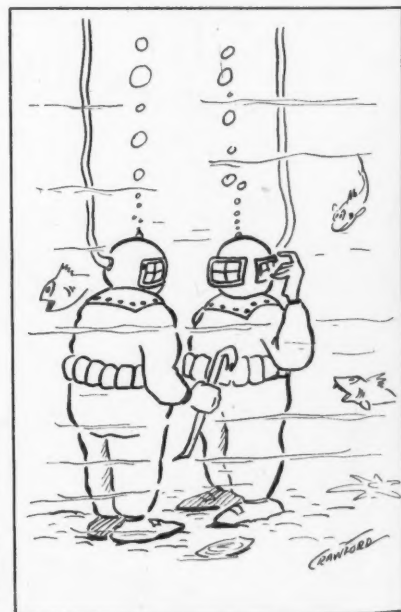
The Johnson F-B Series of Bearings are uniform, high quality products made to the same exacting standards as original equipment. They are easy to sell . . . easy to install . . . and deliver exceptional performance. Why not check your needs NOW?

Catalogue

Write for your FREE copy of our latest complete automotive catalogue.



JOHNSON BRONZE
SLEEVE BEARING HEADQUARTERS
455 S. MILL STREET NEW CASTLE, PA.



"My head itches."

ignition-fritz

TRADE MARK



Sells ON SIGHT . . .

With This Self-Selling
Counter or Wall Display



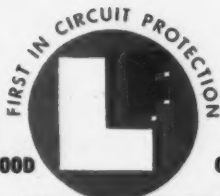
- TESTS FOR WEAK, FOULED, OR SHORTED SPARK PLUGS
- SHOWS WEAK OR STRONG SPARK SEPARATELY
- LOCATES IGNITION CABLE INSULATION BREAKS
- CHECKS FOR DISTRIBUTOR HEAD ELECTRICAL LEAKS
- FINDS RADIO INTERFERENCE SOURCES OR STATIC ELECTRICITY
- POCKET CLIP FOR HANDY CARRYING
- EASY-TO-USE SPARK PLUG GAP GAUGE
- BUILT-IN VALVE CORE REMOVER

Step up your sales and profits with this handy pocket tester. Every gasoline engine user and mechanic is a prospect and the attractive counter or wall display sells them without time or effort on your part. Order today and cash in on this fast-selling new item . . . while other merchandise is hard to get . . .

ONLY **49c** LIST

LITTELFUSE

DEPT. A2-4757 N. RAVENSWOOD



Incorporated

CHICAGO 40, U.S.A.

FUSES, MOUNTINGS AND ACCESSORIES • CIRCUIT BREAKERS • SWITCHES • NITE-T-LITE • SWITCH-LITE • IGNITION-FRITZ • NEON INDICATORS

OCTOBER, 1946

When writing to advertisers please mention Motor Age

113



AUSCO'S 35

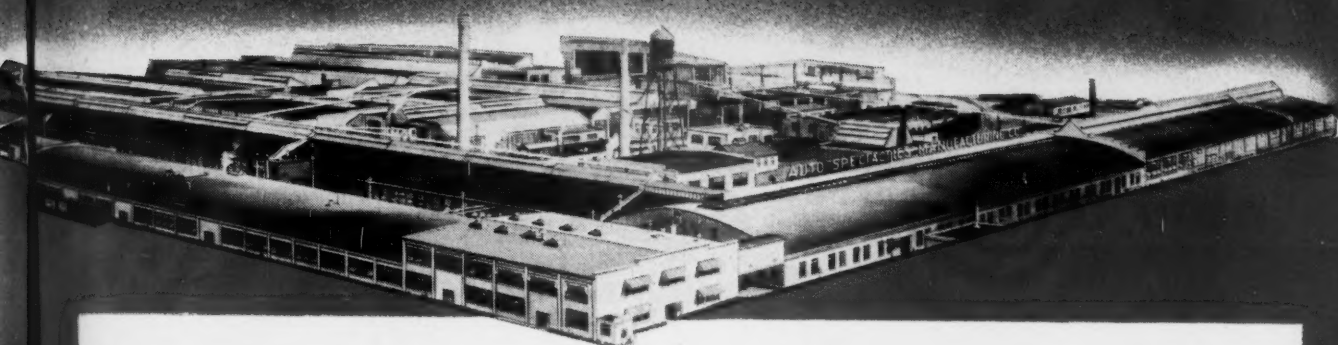
Watch **AUSCO***

for the Latest in Mechanical and Hydraulic Jacks All Fully Covered by Patents...Turning Their Exclusive Betterments to the Exclusive Advantage of Ausco Sellers and Users.

*Trademark Reg. U. S. Pat. Off.



Successful Years



...They Mean Profit...Satisfaction...for
the Men Who Sell and Use the New

AUSCO *Mechanical* *and Hydraulic JACKS*

To succeed in retail selling, deal with successful firms. To buy a dependable article, buy from a successful manufacturer. Why? Because that company's success is only a reflection of the success of its sellers, the satisfaction of its users. Ausco has been the top-flight success for 35 years... because no man can sell better jacks than Auscos, and no man can ask for better jacks for car or garage than Auscos. They're built of the best, they're designed by multi-million-jack experience. *The jacks that succeed today were pioneered yesterday by Ausco; the jacks of tomorrow are being launched by Ausco today...* AUTO SPECIALTIES MFG. COMPANY, ST. JOSEPH, MICHIGAN, U.S.A., WINDSOR, ONTARIO, CANADA.

1966

Legally Speaking

(Continued from page 112)

account, he had better be very sure of his ground. Under some circumstances he may be unable to collect from the husband, as a New York court decision suggests.

Ordinarily, the wife acts as the family "purchasing agent" to buy goods for herself, her husband and their home. She acts as her husband's agent in making these pur-

chases, and he is legally obligated to pay for them. Even where this situation does not exist, the wife has the right to buy "necessaries" for her own use and charge them to her husband, who is legally obligated to pay for them whether he authorized their purchase or not. This is on the legal principle that a husband is liable for "necessaries" for his wife's maintenance.

In New York recently a married woman incurred a bill for what were unquestionably "necessaries"

—medical and hospital treatment for herself. As she was unable to pay, the hospital sued her husband but could not collect. This was solely because the wife had left her husband without justification and was living apart from him. Discussing this question of the husband's liability for the wife's support, the New York court said:

"Where the husband and wife are living together, and the wife procures necessities, it has long been held that in procuring them she has acted as the agent for her husband, the necessities in question being charged to him, and the husband is liable therefor. Their living together is one of the essential grounds of such agency.

"If the wife abandon a home provided by the husband and lives apart, the agency is no longer presumed. While the wife continues to live apart without legal cause for separation, her agency to bind her husband for necessities is suspended."

One of the factors in this particular case was the fact that the hospital in the first instance submitted bills made out in the name of the wife as debtor. This indicated, the court thought, that the charge was made to the wife on her own credit in the first place and that the attempt to hold the husband liable was only an after-

(Continued on page 118)

THE CENTRAL 360° IS YOUR

new and improved

WIRE HOSE CLAMP



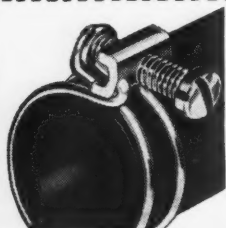
PUSH + PULL POWER! LOOK how the new, perfect mechanical principle of push plus pull clinches this clamp's powerful wire strands into a vise-like grip on the hose. Every part is "oversize" for extra strength. Compare the driving power of the 360 powerful screw with that of the ordinary hose clamp.

1



NO BLIND SPOT! THE ABSENCE of a "tongue" found in all other clamps, completely eliminates the "blind," or "soft" spot—the primary cause of leakage in other clamps. Also, the unusual takeup of the 360 guarantees the elimination of leakage trouble—even on today's irregular synthetic hose.

2



A PERFECT CIRCLE! DON'T OVERLOOK how, because of the new push plus pull principle, terrific pressure is exerted on every point, without damage to the hose. This 360 degree grip which maintains the same amazing pressure on the entire circle of the clamp is positive leak prevention.

3

CENTRAL HOSE CLAMPS are now being successfully used by General Electric, International Harvester Company, Mall Tool Company, Waukesha Motor Company, Chrysler Corporation of United States and Canada, Chris-craft and many others.

CENTRAL EQUIPMENT CO.

902 S. WABASH AVE. CHICAGO 5, ILLINOIS

CENTRAL EQUIPMENT CO.
902 S. Wabash Avenue... Chicago 5, Ill.
Gentlemen: Please send FREE sample of your
360° Hose Clamp and your Bulletin No. 100F
Name.....
Address.....
City.....State.....



"Who ever heard of a lazy beaver!"

LET'S SEE - GAS, WATER, OIL

WHEEL!



Better Ask How's Your Oil Filter?

"WHEEL!" is right—and we're not talking about the lady! "Wheel!" is the word for the *extra sales* you get when you ask, "How's Your Oil Filter?"

Try it and see! It's so simple you'd hardly believe it. Most customers answer, "I don't know," then you open the hood and see. If oil on the dipstick is dirty, show the customer and say, "Mister, your filter is not protecting your motor in that condition. You need a new Fram replacement cartridge!"

If the car is not filter-equipped, tell the motorist that Fram oil filters remove dirt, dust, grit, carbon and abrasives, keep oil physically, visually clean*, help prevent motor wear, breakdowns, repairs. Install a complete Fram oil filter on the spot—takes only a few minutes, but adds up to a nice profit for you. Fram Corporation, Providence 16, R. I. In Canada: J. C. Adams Co., Ltd., Toronto.

*Certain heavy-duty oils, due to the detergent additive used, will turn dark in color almost as soon as put into the engine. Where such oils are used, filter cartridges must be changed on a mileage basis.



FRAM Replacement Cartridge

THE MODERN OIL & MOTOR CLEANER

Legally Speaking

(Continued from page 116)

thought. (*Rochester General Hospital vs. Ingstrum*, 298 *New York Supplement*, 603.)

Where a husband and wife are living together, and it has been the practice for the wife to buy for personal and family needs and charge her purchases to the husband's account, the businessman who sells to her under these condi-

tions runs no great risk of being unable to collect from the husband—other than the ordinary credit risks.

Where husband and wife are living apart, however, the business man has no means of knowing whether she was justified in leaving her husband and hence is in no position to determine whether the husband can be held legally and financially liable for goods sold to the wife, even though they be necessities. Where a woman es-

tranged from her husband buys on her own credit and has personal means, the repairman who sells to her is justified in dealing with her as he would with any other credit customer; but where such a woman wants to buy merchandise and charge it to her husband, the collectibility of the account is doubtful at best.

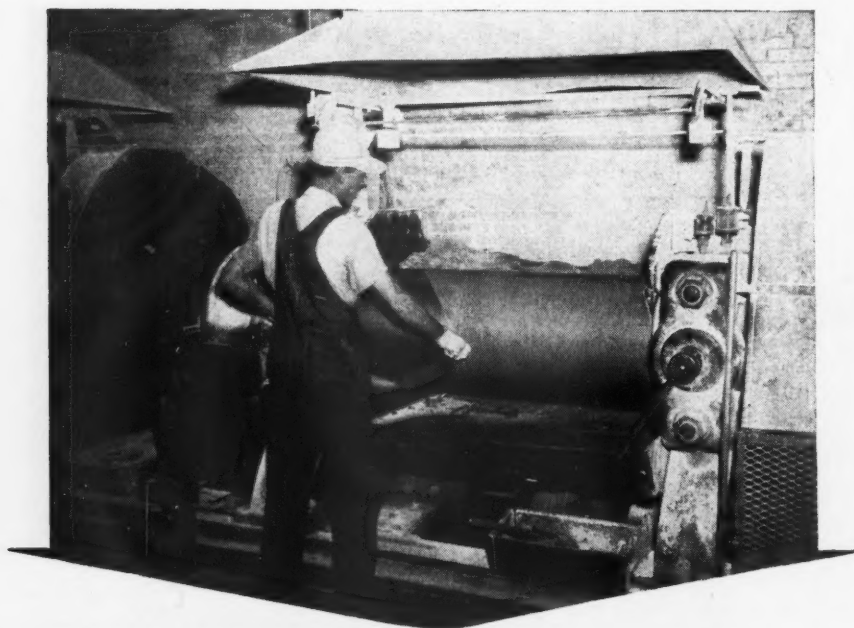
Branch Manager's Authority

Is a repairman safe in doing work on credit for a large company on the order of its branch manager? What is the repairman's legal position if the company should repudiate the branch manager's contract for the work and materials?

The repairman's chances of collecting from the company would depend largely on the branch manager's authority to act for the company, according to a Texas court decision.

There, an Oklahoma corporation was sued on a contract for labor and material entered into by the manager of its Texas branch. The contract dealt with matters not ordinarily within the scope of the Texas branch's business. The corporation argued that its Texas branch manager had no authority to bind the corporation on such a contract. The claimant bringing

(Continued on page 120)



CAMEL Patches

This Egan rubber mill mixes the raw materials which make up the new live rubber in CAMEL Patches. Here rubber is actually compounded under strict laboratory control to patch positively any tube manufactured today whether natural rubber or red stripe or blue stripe synthetic. By such vigilance CAMEL Patches win friends and make customers.

IN THE PERFECT NEW PACKAGE!

To perfect the delivery of these live patches and their better heat elements, CAMEL Patches are delivered in a new moisture-repellent, hermetically-sealed package—perfected in wartime for overseas shipments of CAMELS. Remember, for ACTION it's CAMELS, every time, anywhere!



Look for the familiar CAMEL package anywhere!

CAMEL Patches

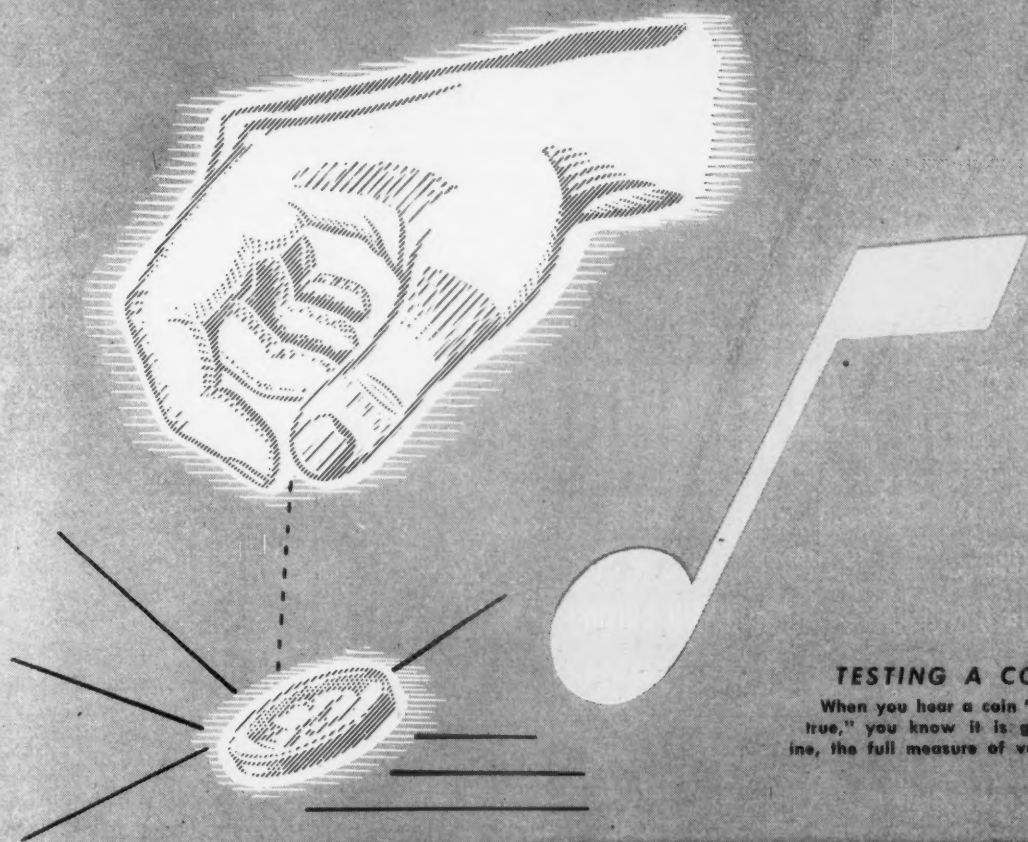
H. B. Egan Manufacturing Company, Muskogee, Oklahoma

In Canada: GEORGE M. WATSON & CO., Ltd. Toronto, 2

Other CAMEL Products available in the complete line are: Quick Cure Gum, Tube Repair Kits, Garage-size Kits, Vulcanizing Cement, Rubber Cement, Tire Patch Cement, Vulcanizing Kits, and Valve Stem Heat Units.



"Let me explain it this way; the bottom one goes around and when it reaches the top, it—well, it starts all over again. That's all."



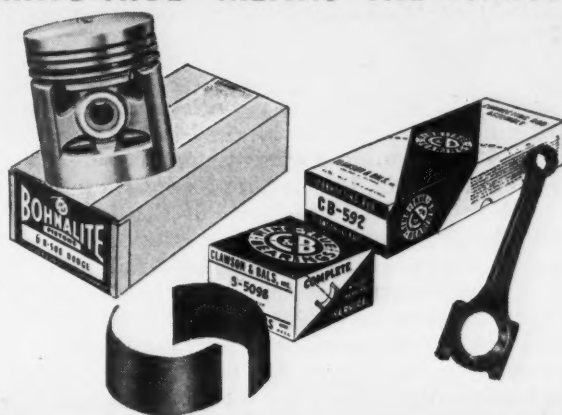
TESTING A COIN

When you hear a coin "ring true," you know it is genuine, the full measure of value.

"RING-TRUE"

IN AUTOMOTIVE PRODUCTS, TOO, "RING-TRUE" MEANS THE FINEST

If you know your automotive products, you know what the name "Ring-True" means — the *finest*! The finest in materials, in workmanship and in performance. You'll be seeing the "Ring-True" emblem of Clawson & Bals on more and more new products. You'll find it now on Engine Bearings . . . Reconditioned and Rebabbitted Connecting Rods . . . Bohnalite Pistons and Pins . . . Hydraulic Brake Parts . . . Hydraulic Brake Hose . . . Whip Ends . . . and Flexible Hose Assemblies for gas, oil, grease and vacuum lines. For the *finest*, remember — it's "Ring-True"! Clawson & Bals, Inc., 2508 S. Michigan Ave., Chicago, 16.



Genuine



CLAWSON & BALS, INC.

Really Complete Engine Bearing and Connecting Rod Service . . . Branches in Principal Cities

Legally Speaking

(Continued from page 118)

the suit relied on the branch manager's general authority as a representative of the corporation.

But the Texas court pointed out that a branch manager's legal power to make a binding contract for the corporation is subject to well-defined limitations.

"That he was manager of the corporation's branch business in

the Texas district," the court said, "does not establish general agency authority in him in the sense of being the universal agent of the corporation with power to make any and all character of contracts that the corporation itself could lawfully make, regardless of whether within the general scope of the business being operated at the branch.

"Branch manager and general manager are not synonymous terms, and no presumption arises

from the position of branch manager that he has actual authority to bind the corporation in matters aside from and beyond the usual and customary course of, or incident to, the particular business of which he is manager."

In other words, a corporation is not bound by a branch manager's deals and commitments unless they are reasonably within the scope of his job. If the corporation repudiates a contract made by its branch manager with a repairman on the ground that the manager had no authority to make it, the repairman has to prove that the manager had the authority; the corporation does not have to prove that he didn't have it.

Of course, if the corporation allows a branch manager to take care of things not ordinarily part of his work, the corporation is liable for what he does. This is on the theory that by allowing him to do those "outside jobs" the corporation thereby clothes him with "apparent authority," and in such instances people dealing with him have a right to rely on the "appearances" of authority.

Then, too, if the branch manager makes an unauthorized deal and the corporation knowingly accepts the benefits of it, the law will compel the corporation to bear the disadvantages as well. (*Pittsburgh Pipe & Supply Co. vs. Federal Machine and Supply Co.*, 107 *Southwestern Reporter*, second series, 637.)

STORM WARNING!

MISTER SERVICE STATION OWNER—YOU'LL
MAKE MORE FRIENDS AND BIGGER SALES IF YOU
TELL YOUR CUSTOMERS ABOUT NO-CHAIN DRIVING



"You can't beat Pyrene Chains for long wear."

"And they'll hold the road in weather like this too."

When a surprise stop seems to put skis on tires, it's time to put on chains. But the time to sell your customers road-gripping Pyrene Chains is before they need to use them. Pyrene Tire Chains cut into slick surfaces, hold the car where it should be, and the Easy-On Easy-Off lock makes installation a quick operation. Pyrene Doubleduty Bar-Reinforced Chains give your customers more miles of service. New design V cross bars give straighter, safer and quicker stops. Better traction at slightly higher cost. Cut yourself in for bigger and better sales. Sell Pyrene Chains. Ask your jobber for the Safety Sam Tire Chain Chart.

SAFETY SAM SAYS:

Put your faith in a well-known name. Pyrene stands for safety on slick roads.



PYRENE MANUFACTURING COMPANY
NEWARK 8, NEW JERSEY
Makers of Pyrene Fire Extinguishers
AFFILIATED WITH C-O-TWO FIRE EQUIPMENT COMPANY



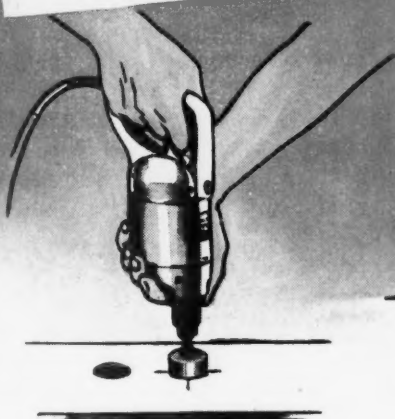


"Oh, I like big cars. They're so roomy."

More Profit in Carbon Cleaning!

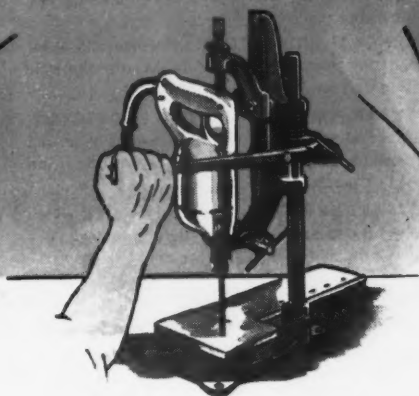
Team Up This Versatile Drill with Carbon Cleaning Brushes!

Slick as a whistle! That's the way engine parts look after you've used a Black & Decker $\frac{1}{4}$ " Heavy-Duty Electric Drill with Black & Decker Carbon Cleaning Brushes and Valve Guide Cleaners. That's the modern, high speed way to remove carbon from engine blocks and cylinder heads. Clean valve ports and guides. Leave a bright, burnished surface that resists new carbon accumulation. Four types of Brushes. Eleven sizes of Valve Guide Cleaners. More uses for the $\frac{1}{4}$ " Heavy-Duty Drill shown below.



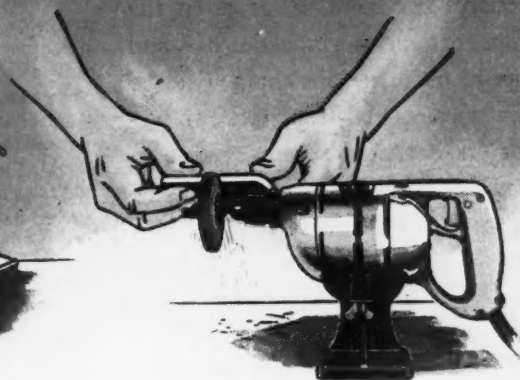
As a Portable Tool . . .

The $\frac{1}{4}$ " Heavy-Duty Drill drives twist drills up to $\frac{1}{4}$ ", wood augers up to $\frac{1}{2}$ ", Hole Saws for cutting clean, round holes up to $1\frac{1}{2}$ " diameter in any material a hacksaw will cut.



As a Drill Press . . .

Mounted in a Black & Decker Bench Drill Stand, this Drill makes a powerful drill press. Plenty of leverage to put on the pressure. A slow, smooth feed for more precise work.



As a Multi-Use Tool . . .

Mounted in a Black & Decker Horizontal Drill Stand, the $\frac{1}{4}$ " Heavy-Duty Drill does stationary drilling and reaming. Drives wheels for light grinding, wire brushing and buffing.

For Complete Catalog of more than 100 different Black & Decker Electric Tools and over 1,000 attachments, write to: The Black & Decker Mfg. Co., 627 Pennsylvania Ave., Towson 4, Md. For help on any tooling problem, see your nearby Black & Decker Distributor.

LEADING DISTRIBUTORS  EVERYWHERE SELL

Black & Decker

PORTABLE ELECTRIC TOOLS

CPA Order Affects Car Production

AUTOMOBILE manufacturers are deeply concerned over the effect of CPA directions 12 and 13 of Order M-21, which allocate distribution of steel, merchant pig iron, and iron castings to the housing and farm equipment industries. In effect, the directions give producers of specified items in these two industries a preferential position in relation to the limited avail-

able supply of these scarce commodities. Of the two orders, the one dealing with pig iron and castings is the more troublesome, since the available supply is even more out of balance than with steel.

The present shortage of scrap contributes greatly to the bad situation in pig iron and steel. Normally a good supply of this material comes from the breaking up of old cars and other machinery. However, with millions of old cars still running far past the age when

they normally would have been junked, this source is negligible today. Also, the concentrated scrap drives conducted during the war have pretty well cleaned up most of the old junk lying around on farms and in other places, so that source has practically dried up. Another factor in the shortage of pig iron is that OPA pricing made production unprofitable, with the result that many furnaces are not operating. Some price adjustments have been made, but they still are not considered high enough by many marginal producers to war-

(Continued on page 124)



Dirt in the cooling systems of your customers' cars can be mighty expensive for them. It is often the cause of annoying breakdowns—and can result in serious engine damage that means costly repairs. Your customers depend on your service to help keep their cars in tip-top shape. Make it *thorough* service by including complete cooling system care with famous Warner products.

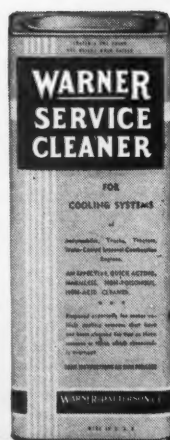
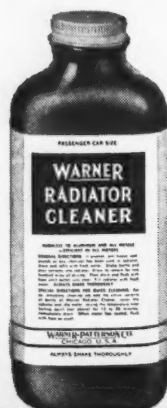
WARNER RADIATOR CLEANER. Quickly removes rust, scale and oil or grease accumulations which obstruct circulation and lower cooling system efficiency.

WARNER LIQUID SOLDER. Non-metallic—deposits tiny fibers to repair leaks anywhere in cooling system.

WARNER COOLING SYSTEM PROTECTOR. Keeps cooling system clean. Prevents rust and corrosion which lead to general overheating and local "hot-spots."

WARNER SERVICE CLEANER. Prepared especially for trucks and heavy-duty engines. Removes rust, scale, oil muck, grease.

WARNER-PATTERSON COMPANY
920 S. MICHIGAN AVENUE, CHICAGO 5, ILL.



Every "drive-in" is a prospect for Warner Products. Sell 'em all!

WARNER COOLING SYSTEM COMPOUNDS

STANDARD OF PROTECTION FOR MORE THAN 25 YEARS

Copyright 1946, Warner-Patterson Co.

Hastings Names Collins



Don H. Collins

Don H. Collins has been appointed advertising director for the Hastings Manufacturing Co. and its associate, the Casite Corp. He has been closely associated with a number of auto-

mobile and accessory manufacturers in his former connections, with Sidener, Van Riper & Keeling and later as executive vice-president of Keeling & Co., and is widely known throughout this industry.



"Oswald has been getting up on the wrong side of the bed recently."



The Man Who's Known as "Your Chevrolet Dealer"

*is also known as a leader in the business
and civic life of his community*

We of the Chevrolet Motor Division feel that we have every right to be proud of the members of the Chevrolet dealer organization.

Many of them have been associated with Chevrolet for ten—fifteen—twenty-five years or longer; and, in a large number of cases, the sons of former dealers are "carrying on" the original Chevrolet dealership.

First of all, of course, these men are leaders in the automotive industry . . . merchants who have earned and returned the friendship and goodwill of car and truck buyers . . . holders of America's preferred automotive franchise.

They are also leaders in other branches of civic and social life, doing everything in their power to serve the best interests of their communities.

And, on more than a few occasions, this has meant serving on a committee for civic betterment, or as the mayor of a town, as an officer of a state, or as a member of the Congress of the United States.

For not only is "your Chevrolet dealer" a mighty good automobile dealer—he is also a mighty good citizen of his community and of the nation.

CHEVROLET MOTOR DIVISION, General Motors Corporation, DETROIT 2, MICHIGAN

Going Forward Together



You and

CHEVROLET

CPA Order Affects Car Production

(Continued from page 122)

rant re-opening furnaces. The shortage of scrap also has a double effect on the pig iron deficiency. If not enough scrap is available to charge steel furnaces, the only recourse is to use scarce pig iron, which further reduces the available supply. Some companies have even gone so far as to make direct

trades with steel mills, whereby scrap from the plants is allocated to the mill in exchange for steel, although this practice is not widespread.

The allocation of castings has a direct effect on the automobile industry, which has no priority rating under M-21. Foundries are required to fill certified orders granted under direction 13. Only after these orders have been taken care of can the remaining supply be distributed "in a fair and

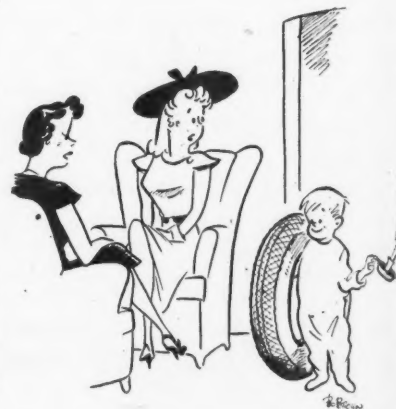
equitable manner." The results have been that the automotive companies have been forced to scurry around to find what they can after priority orders have been filled. This, of course, requires shopping in a great many places, and some have gone as far away as Texas and Utah to buy pig iron for their own foundries at a heavy freight differential. The outlook for improvement in the near future is not very good and may exert an important influence on production schedules the rest of this year, at least. A big help would be use by the building industry of vitreous soil pipe in place of cast iron. However, that would require revision of building codes, which is not a likely prospect.

Snap-On Promotion

Promotion of William R. Elwell to the position of merchandising department buyer was announced recently by President Joseph Johnson, of the Snap-on Tools Corporation, of Kenosha, Wis. Elwell previously held the position of Snap-on sales

engineer.

The newly created position was set up to facilitate purchase and marketing of auxiliary and accessory tools produced by supplier companies.



"That's what you think! He never wants to go to bed."

BELL-RINGER

FOR
SALES
AND
PROFITS!

Klemm

GASOLINE FILTER

with *Chemistone* the original
CONTROLLED POROSITY ELEMENT

Priced Low for Fast,
Easy Sale

Quickly Installed

A Positive MONEY-MAKER



Here's a specialty that has everything — a big market, established demand, low price, easy sales and a long profit. It's a sales natural, if there ever was one. Every car should have one for better performance . . . Every owner is a prospective buyer. The high-efficiency Klemm Filter insures CLEAR, CLEAN gasoline . . . It filters out dust, sediment, water, abrasives, etc. . . . and eliminates "frozen" fuel valves that stall motors. PUSH IT FOR PROFIT!

KLEMM AUTOMOTIVE PRODUCTS CO.
1718 N. Damen Avenue Chicago 47, Illinois
Export Division: Guiterman Co., Inc., 35 S. William St.
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ORDER FROM YOUR JOBBER!

*Modern
as Tomorrow*



HANSEN AUTOMOTIVE AIRLINE EQUIPMENT

It takes modern equipment to render the kind of service demanded by to-day's car owner. That is why Hansen Automotive Airline Equipment is now used by more service station operators than ever before.

Every service station, garage, car dealer and repair shop can use Hansen equipment advan-



tageously because it is designed and engineered to do a service job faster, better and more economically.

HANSEN SAND BLAST CLEANER is an ideal unit for removing old paint, rust and carbon etc. Container holds three pounds of sand. Furnished with $\frac{1}{4}$ " hose stem for airline connection.

HANSEN BLOW GUN is a sturdy lever-operated blow gun with accurately machined air valve. Body of heavy cast brass which will withstand rough handling. Stem for air connection furnished in $\frac{1}{4}$ " $\frac{3}{8}$ " $\frac{1}{2}$ " size.

HANSEN JET OILER is manually operated, projects a solid jet of light or penetrating oil when plunger is depressed. Oil container has a one quart capacity. All pump parts are enclosed in handle, fully protected.

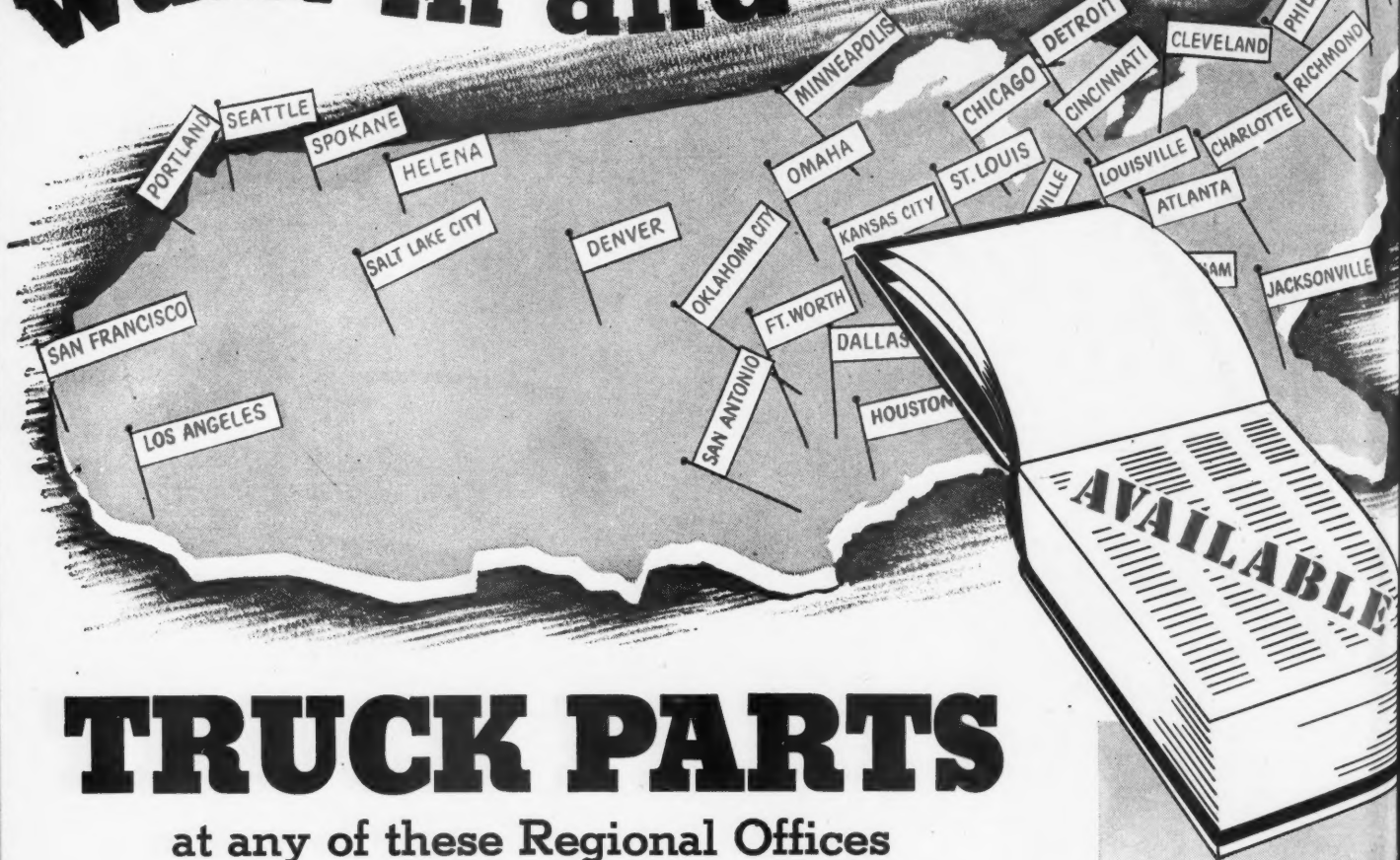
Send for free automotive catalog.



HANSEN MANUFACTURING CO.

1786 EAST 27th STREET • CLEVELAND 14, OHIO

walk in and ORDER



TRUCK PARTS

at any of these Regional Offices

War Assets Administration has them! And now it's easy for you to order what you need. You can tell at a glance whether we have what you're looking for. Information is kept strictly up-to-date on 11,000,000 truck parts . . . all inventoried by manufacturer's part number.

This is your chance to get the parts you need without waiting, without reams of red tape. Visit the Automotive Parts Section Chief in your nearest WAA Regional or District

WAA POLICY ON DUPLICATE ORDERS

A few parts are in limited supply. When duplicate orders are received the parts are allocated equitably to the duplicating buyers. You know what that means—your chance to buy is as good as the next man's, for there is no bidding; there are no preferred "old customers." It also means you can't expect to hit the jackpot on shortage items. We'll try our best to fill your order, but the other fellow has to have his share, too.

This material is offered in the following sequence as provided by law: (1) Certified Veterans of World War II; (2) Subsequent priority claimants; (3) Non-priority purchasers. Federal agencies have had opportunity to

Office. You can place orders at once and get prompt shipment, prepaid. If the parts you want are not on the available list, you'll find out about it right there! For every Regional Office maintains a copy of the Perpetual Inventory which is controlled centrally in Detroit. Information is never more than twenty-four hours old.

Remember, this inventory listing of available automotive parts is for your convenience. Make full use of it in your parts requirements.

DISCOUNTS

(Discount off manufacturer's list price as shown in catalogue. Minimum sale—\$500 net)

Distributor, 75% Vehicle Dealer, 55%

Service Garage, 50%

Fleet Owner (5 or more vehicles), 45%

fulfill their needs. VETERANS OF WORLD WAR II should apply to their nearest WAA Regional Office for certification; the case number assigned and the location of the certifying office must be stated in a Veteran's offer to purchase.

All orders are subject to prior sale. Items in short supply are equitably allocated. Place your order today.

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Offices located at: Atlanta • Birmingham
Boston • Charlotte • Chicago • Cincinnati
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PERPETUAL INVENTORY

The national inventory is compiled monthly. Supplemental listings are issued each month. When items are added to the inventory, each of our field offices is notified immediately so that its inventory may be current.

Every Regional and District Office has a copy of the inventory. Each order for truck parts is promptly transmitted to the National Automotive Parts Office in Detroit, Michigan. The Detroit Office issues the order against the consolidated perpetual inventory and issues shipping instructions with immediate notification to the proper Regional Office. Place your order today.

HOW TO USE THE BUYING

- Go to your W. A. A. Regional or District Office
- Ask for the Automotive Parts Section Chief
- Examine the inventory
- Place your order
- That's how simple it is!

White Motor Presents Eleven New Models

(Continued from page 56)

engine used in the WB-28-28T-2864 Series trucks develops 170 hp., and the 280A used in the WB-3264 develops 184 hp. The line is rounded out further by the introduction of three 6-wheel and three factory-built tractor models specifically designed for the job.

Before considering the specification details of the two new engines, it is of interest to point out the major features of design common to all White engines in current production. These are as follows: Stellite-faced sodium-cooled exhaust valves; Stellite-faced exhaust valve inserts; zero-lash hydraulic valve lifters; duplex carburation with individual cylinder manifold ports; copper-lead engine bearings; Tocco-hardened crankshaft; bypass cooling system and positive crankcase ventilation.

Stemming from military vehicle experience during the war is a new crankcase ventilating system com-

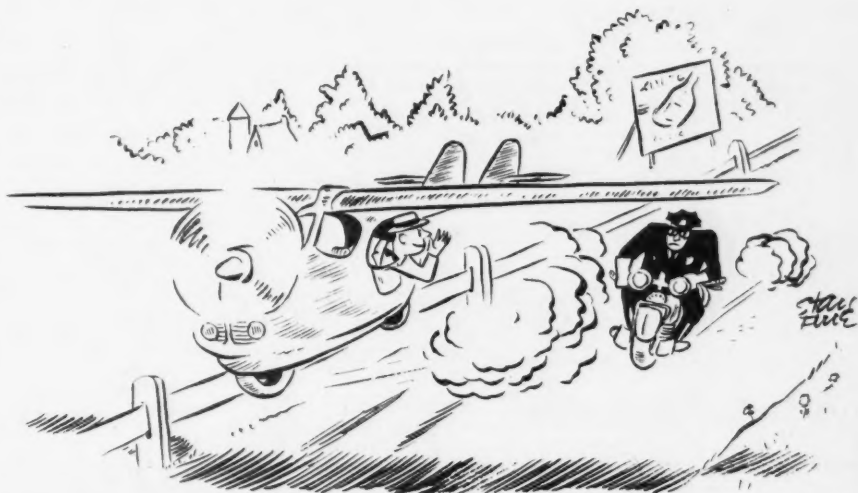
mon to all WB models. It consists of the familiar suction valve connected to the intake manifold which aids in eliminating blow-by vapors. In addition White has adopted a more accessible type of air cleaner.

There are two new engines. The 260A is L-head, 6 cyl., 4 $\frac{3}{8}$ in. bore x 5 in. stroke, 45 cu.in. displacement, rated 170 hp. at 3000 rpm., with 6.25 to 1 compression ratio, and maximum torque of 350 lb.ft.

The 280A engine is L-head, 6-cyl., 4 $\frac{5}{8}$ in. bore x 5 in. stroke, 504 cu.in. displacement, rated 184 hp. at 3000 rpm., with compression ratio of 6 to 1, maximum torque of 405 lb.ft.

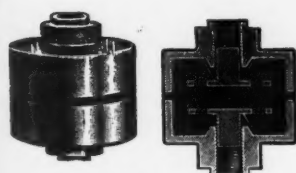
Intake manifolds are water-cooled and, considering the high power output, the entire cooling system is free from hot spots to permit the use of high compression heads with commercial gasoline.

(Continued on page 154)



MOTOR MOUNTINGS & SUPPORTS

NO METAL TO METAL CONTACTS



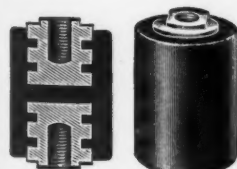
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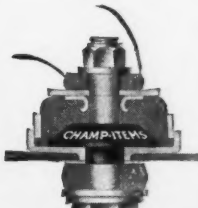
66



971 A-B



401



915



No. 954 Improved Front Engine Mounting for Chevrolet 1935-42 passenger cars and sedan delivery trucks "oil proof" — shielded so that oil and grease will not contact rubber cushion. List \$1.50 each.

No. 401 Improved Side Motor Mounting for 1935-42 Chevrolet cars and delivery trucks, "oil proof" — eliminates clutch chatter. List \$1.00 each.

No. 66 Improved Front Motor Support for Model A-A-A Fords. List 85c each.

No. 971A-B Motor Support Rubber Mountings for Fords and Mercury cars. No. 971-A upper (for early V-8's 2 mountings required — for late models — 4 required). List 50c each. No. 971-B lower (for all V-8's and Mercurys). List 25c each.

No. 915 Motor Support Stabilizer for Fords and Mercurys. List 25c each.

ORDER FROM YOUR JOBBER

CHAMP-ITEMS, INC.

6191 Maple Ave. • St. Louis 14, Mo.

Raw Materials Present Long-Range Problem

For the past few months, supplier strikes have been holding the industry down to low volume production. Although the strikes continue, they have been superseded as the major problem by the increasingly critical situation in raw materials, such as lead, steel, pig iron, copper, and even such items as castor oil for brake fluid. Right now lead appears to be the most

critical item, but steel probably is the material that will have the long time effect on production schedules. According to current prospects, there will not be enough steel available throughout next year to make possible the six million car year that the industry has set for its goal. At present, steel mills are humming along at near capacity, but the nationwide demand is so great that according to steel industry spokesmen the amount allocated for automobiles and trucks will sup-

ply at best enough for only a moderate increase over 1941 levels. One thing that has delayed the expansion of the steel industry was the prolonged strike in the electrical industry, with the result that machinery promised for this fall may not be delivered before late 1947. Priority ratings on steel for certain uses, such as housing, agricultural implements, and food packing, also make it difficult for automotive manufacturers to get their current quotas of available steel. One company received only 70 per cent of its 1941 supply in August and is operating on an inventory of only 15 days supply, compared with a normal backlog of 45 days. Some companies are predicting that they soon may have to use steel the day it arrives at the plant.

OUT OUR WAY



SOL-SPEEDI-DRI FOR SLICK, SICK FLOORS!

Put SOL-SPEEDI-DRI down, and you've got a non-skid carpet of safety underfoot . . . safe for walking, safe for working! What's more, SOL-SPEEDI-DRI soaks up oil and grease as a blotter soaks up ink . . . makes floors as dry as a bone . . . as clean as a whistle.

SOL-SPEEDI-DRI . . . the white, granular oil- and grease-absorbent . . . is easy to use. No complicated machinery . . . no trained personnel . . . is needed for its use. One man to spread it over greasy, dangerous floors . . . the same man to sweep it up after it's done its work. That's all!

SUPPLIERS:

East—Safety & Maintenance Co., Inc., New York 1, N. Y.

South, Midwest & West Coast—Waverly Petroleum Products Co., Philadelphia 6, Pa.



SOL-SPEEDI-DRI

OIL AND GREASE ABSORBENT

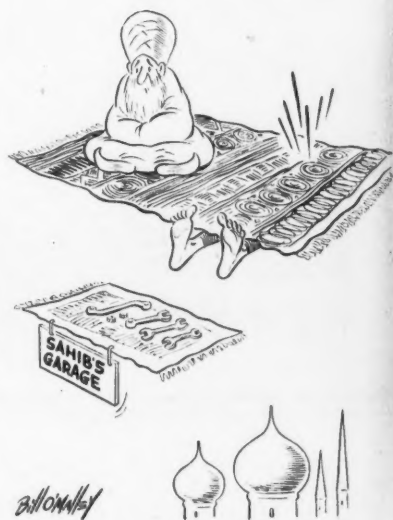
Pin your card to this advertisement and mail today for full details and a free, generous sample of SOL-SPEEDI-DRI.



Walker Appoints Morgan

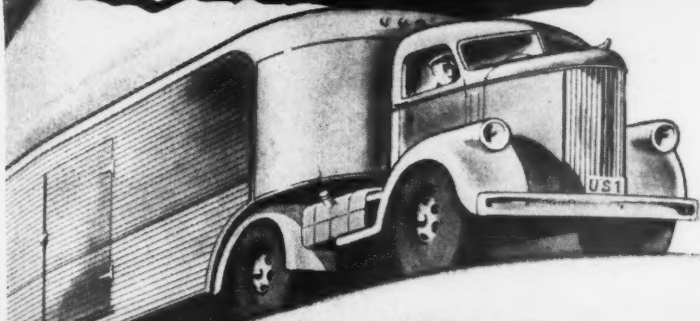
The appointment of Wm. C. Morgan, Jr., to the position of sales manager of its Original Equipment Division has been announced by The Walker Manufacturing Company of Wisconsin, Racine, Wis.

He has been associated with the automotive industry since 1926. From 1935 to 1937, he was a sales engineer for Walker. Then he served in the same capacity for the Perfect Circle Company until 1941 when he was called to active military duty. He will be in full charge of the car factory sales activities of the Walker Manufacturing Co., both on original equipment jacks and mufflers, with headquarters at Jackson, Mich.





Buy ^{}LO-EX pistons...
for REPLACEMENTS*



You'll reflect
the good judgment
of the many car,
bus and truck builders
who used them as
original equipment.



Ask for **LO-EX PISTONS**
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PISTONS OF



WHICH TYPE OF TOOL AIR OR ELECTRIC is best for



THOR MULTI-MATIC AIR TOOLS

Seven complete tools are in the Thor Multi-Matic Kit. . . $\frac{1}{4}$ " and $\frac{1}{2}$ " Drills, Grinder, Sander, Wire Brush, Polisher and Hole Saw. Each is available as a unit; any unit can be converted into other tools with interchangeable attachments. Run from a compressor as small as 3 H.P.

THOR ELECTRIC TOOLS

A wide range of drills, grinders, sanders, polishers, tappers, holesaws, wire brushes and other Portable Electric Tools in sizes and capacities for any job are in the complete Thor Line.

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GET UNBIASED ADVICE
from your *Thor* Jobber—
and get your jobs out faster . . . at lower cost!

ur Thor Jobber, working with Thor Tool Engineers, can be of real aid to you in choosing tools that will speed work and cut costs. Because Thor makes *both* air and electric tools, he can give you unbiased advice as to which type is best for *your* shop. And, because Thor makes a *complete line* of both types, he can recommend exactly the right size and style. Call on him for specific tool suggestions—he'll save you *money, time* and *trouble*.

Whether portable electric or pneumatic tools will

best meet your needs, you get top tool efficiency from Thor. For, *only Thor makes both types*—especially designed for automotive shop service. Long standard in factory production, they save time and cut costs on drilling, sanding, polishing, hole sawing and dozens of other jobs.

INDEPENDENT PNEUMATIC TOOL COMPANY

600 W. Jackson Boulevard, Chicago 6, Illinois

Birmingham	Boston	Buffalo	Cincinnati	Cleveland	Detroit	Los Angeles
Milwaukee	New York	Philadelphia	Pittsburgh	St. Louis	St. Paul	
Salt Lake City	San Francisco	Toronto, Canada	London, England			

... *Thor* ... PORTABLE POWER
TOOLS

PNEUMATIC TOOLS • UNIVERSAL AND HIGH FREQUENCY ELECTRIC TOOLS • MINING AND CONTRACTORS TOOLS

Annual T.A.D.A. Meeting

Tennessee Automotive Dealers Assn. completed its three day annual convention at Lookout Mountain Hotel on Sept. 13. James A. Ayers, of Ayers Motor Co., Chattanooga, succeeded Ralph Nichols of Nashville, as president. Oscar Oakley, president and general manager of Hull-Dobbs Co., Memphis, was named regional vice-president. Herbert G. Roberts, of Dyersburg, Tenn., was elected treasurer. Hor-

ace Hull, of Hull-Dobbs Co., was made a life member of the Board of Directors, the first time anyone has been so honored.

Ralph Nichols was selected as director for three years in the National Automotive Assn.

Millians Addresses ADA

Paul M. Millians, vice-president of Commercial Credit Corp., Baltimore, was a principal speaker at the thirteenth annual convention of

the Automobile Dealers Assn. of West Virginia. The subject of his address was that the present economic situation is bound to change, and that with the change dealers will again be *selling* their products, not merely delivering them to a goods hungry public.

SAE Appoints Mallett

Dave B. Mallett, manager of service equipment engineering of the service division, Federal-Mogul Corp., manufacturers of sleeve bearings, has been appointed to the Connecting Rod Committee of the Society of Automotive Engineers.

The committee is assigned to investigate and coordinate processes and developments related to the manufacture of internal combustion engine sleeve bearings and connecting rods.

New Sun Oil Division

Dr. Eugene B. Nugent has been appointed manager of a new Automotive Sales Engineering Division. The new division's work is to give technical assistance to Sun customers in the proper use of petroleum in internal combustion engines, and to coordinate all matters having to do with the technical application of automotive fuels and lubricants.

Oakite Appointment

J. C. Leonard has been appointed sales manager of the industrial marketing division of Oakite Products Corp., Inc., New York. He will direct the marketing and servicing activities of the industrial field staff.

Get your copy
**OF THE NEW WAYNE
AIR COMPRESSOR
CATALOG**

Wayne

backed by a performance
GUARANTEE
AND NATION-WIDE SERVICE

It's more than a catalog... it's a handbook filled with useful information and shows the complete Wayne line.

THE WAYNE PUMP COMPANY FORT WAYNE 4, INDIANA

LUTZ USED CARS

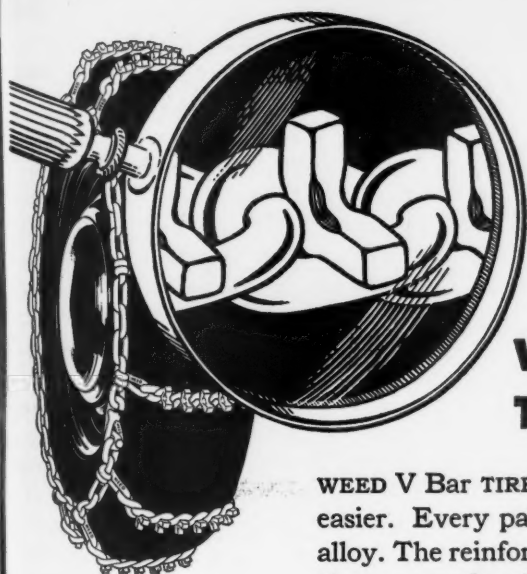


"The reason we can sell them cheaper than we buy them is we do such a big business."

**Get Ready
Now for
Sure
Winter
Profits**

Order your share of **WEED TIRE CHAINS**

and Weed Tools and Repair Parts



WEED TIRE CHAINS will sell faster than ever this year. Drivers need the extra safety tire chains give them—and they prefer WEED CHAINS because they know they can rely on them.

Supplies of WEED CHAINS are still limited. So order chains early—and plan on a big tire chain business this year. Place your order now with your WEED CHAIN jobber and you'll get your fair share.

WEED AMERICAN V Bars The New Idea in Traction

WEED V Bar TIRE CHAINS stop cars straighter and quicker—dig out of drifts easier. Every pair has at least 288 gripping traction points of tough Weed-alloy. The reinforcing bars are set at opposite angles to resist sidesway. More than a new tire chain—they're the new idea in traction. That's why motorists

will prefer WEED AMERICAN V Bar-Reinforced TIRE CHAINS.

WEED Regulars and WEED Extra Heavies have also been improved. You'll sell all you can get!

We are allocating WEED TIRE CHAINS to our jobbers according to their business in previous years. We are confident they will make fair distribution to dealers.

Get all three Weed Chain Profits!

Tire chain service is profitable service. Get ready now to repair chains quickly and well. Have your men practice putting chains on—and charge a standard rate for this service. Make sure you get all three tire chain profits this winter!



1. Repair Chains



2. Service Chains



3. Sell WEED CHAINS

ACCO

York, Pa., Chicago, Denver, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, Portland, San Francisco, Bridgeport, Conn.

**AMERICAN CHAIN DIVISION
AMERICAN CHAIN & CABLE**

In Business for Your Safety

TRADE
MARK



VITALIC

*Fan belts
and
radiator
hose*



The EXTRA FACTOR

in Vitalic products is the extra experience of the men who make them. You expect—and get—better, longer service from Vitalic Fan Belts and Radiator Hose because the experience and skill of specialists are built into the products during every step of manufacture. That is why the name Vitalic has been a symbol of dependable service for more than 35 years. Ask your jobber about the Vitalic Line.

SEE OUR CATALOG IN SWEET'S

BRANCHES

Baltimore, Md.	Cleveland, Ohio	Greensboro, N. C.	Lutz, Fla.	Pittsburgh, Pa.
Boston, Mass.	Dallas, Texas	Hartford, Conn.	Memphis, Tenn.	Rochester, N. Y.
Buffalo, N. Y.	Dayton, Ohio	Indianapolis, Ind.	Milwaukee, Wis.	St. Louis, Mo.
Chicago, Ill.	Detroit, Mich.	Kansas City, Mo.	New York, N. Y.	San Francisco, Cal.
Cincinnati, Ohio	Evansville, Ind.	Los Angeles, Cal.	Philadelphia, Pa.	Syracuse, N. Y.



CONTINENTAL RUBBER WORKS

ERIE, PENNSYLVANIA, U. S. A.

Williams for Motorola

Allan G. Williams was recently appointed regional manager for the New England area of Galvin Mfg.



A. G. Williams

Corp., makers of Motorola Home and Car Radios and Motorola Gasoline Car Heaters. He joined the sales department of the Galvin organization in 1935, after having graduated from Lafayette College the previous year.

Synthetic Insulator

Buchanan Associates, Inc., 220 E. 42nd St., New York 17, N. Y., announce a special, fast drying synthetic resin base insulating solution. It has high di-electric strength, and is resistant to salt spray, water, oil, heat, moisture, corrosion, the manufacturer states. The material can be applied by either brush or spray. An intended use is to protect motors, coils, magnetos, ignition systems of all types of combustion engines, pumps, dynamometers, generators, compressors, batteries and all forms of electrical equipment. Di-electric strength of a one mil film is 1030 volts. The product can be supplied in one and five gal. cans and drums.



"Now you're a happy man. If I let you in you'll go away disgusted because you can't have one."

Mr. Service Station Operator,

have you kept track of your fuel pump jobs?

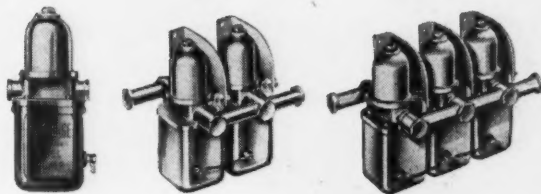


According to the Service Job Analysis for 1945, there were only 7 mechanical elements that more frequently needed maintenance than the fuel pump—38 other elements required less maintenance.

With so many jobs involving the fuel pump, wouldn't it be worth your while to give some thought to this item and perhaps capitalize on it to a greater extent?

Consider for a moment the Autopulse Electric Fuel Pump. Here is what you can do with it and what it will do for you. You can put it on any automobile, truck or tractor, any make, any size. It's easy and quick to install. You can mount it conveniently in the

fuel line on either side of the vehicle. When you standardize on the Autopulse, you can get along on a very small inventory. Because of its superior performance, it builds customer goodwill for you wherever you install it. The most beautiful part of it is, it's profitable—profitable to you.



AUTOPULSE

Write us direct for quotation

AUTOPULSE Corporation

2321 Brooklyn Ave., Detroit 1, Michigan



Her Furs...

custom-styled by Maximilian

The Motor Oil

for her car . . . custom-made by VALVOLINE



AS ADVERTISED IN
TIME
MAGAZINE

Because we carefully maintain custom quality standards in making Valvoline Motor Oil, it can be made only in limited quantity. But Valvoline is available to the select group of motorists who expect better than average performance and who like to give their cars more than the usual protection. You will find Valvoline at one or more of the better dealers in your community.



VALVOLINE

The Original Pennsylvania Motor Oil

Unconditionally Guaranteed

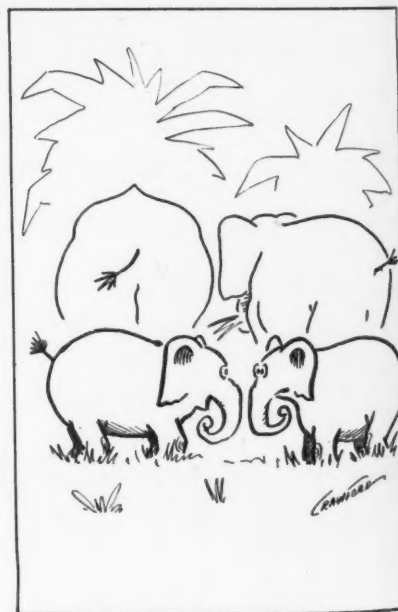
Freedom-Valvoline Oil Co., Dept. 12J Freedom, Pa.
Cincinnati, New York, Washington, Toronto, Pittsburgh, Atlanta,
Detroit, Chicago, Los Angeles, Portland, San Francisco, Seattle
Refineries at Butler, Freedom, Pennsylvania

New Battery Charger

Mellaphone Corporation, 65 Atlantic Ave., Rochester 2, N. Y., has developed a new selenium plate battery charger. Selenium, when properly processed, rectifies alternating current into direct current. The new charger comes in two



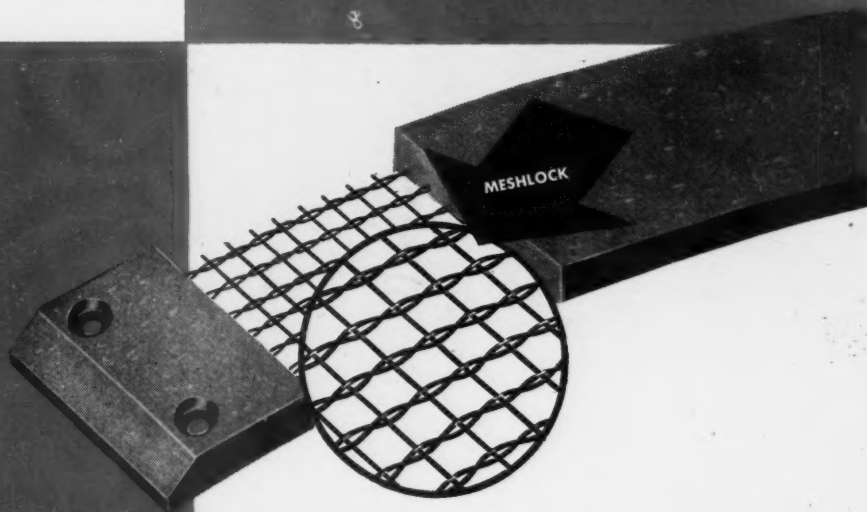
sizes for six and twelve volt batteries respectively. It is so constructed that there is no need to remove the battery from the car. Rated at 8 amps, it delivers from 10 to 12 amps on a discharged battery and automatically tapers to approximately 4 amps at full charge. The attached ammeter shows rate of charge and polarity. Fuses protect the charger from damage by faulty batteries. It operates on 110 volt, 50/60 cycle, ac current.



"If they'd said bomber I might have believed them, but stork! Phooey!"

GRAFILD

Wire Back with MESHLOCK...



prevents "spot-bulge" when riveting lining to brake shoes—no more spoiled linings, spongy brake pedal, "daylight" between lining and shoe.



TWO to ONE . . . another Grafilid first—MESHLOCK puts two tough wires where only one is the accepted practice. This effective method forms a lock in the wire mesh that prevents Grafilid lining from "giving" under the stress of riveting. Grafilid lining goes on flat to the brake shoe at all points . . . stays flat in service.

WORLD BESTOS CORP.

NEW CASTLE, INDIANA



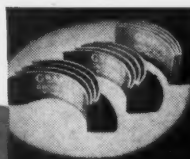
Grafilid PF Prescribed Friction Sets — Engineered for each type brake.



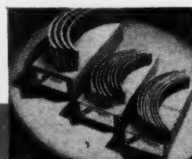
Grafilid DeLuxe Woven — A super quality, dense, high friction woven lining.



Grafilid Royal Molded (Rolls) — A top quality wire-back molded lining.



Grafilid Truck Group Blocks — Undrilled, master segments engineered for trucks.



Grafilid Grid Lock Sets — Wire-back sets for popular cars.



Grafilid Metro Blocks — Engineered for heavy trucks and buses.

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AGE

OCTOBER, 1946

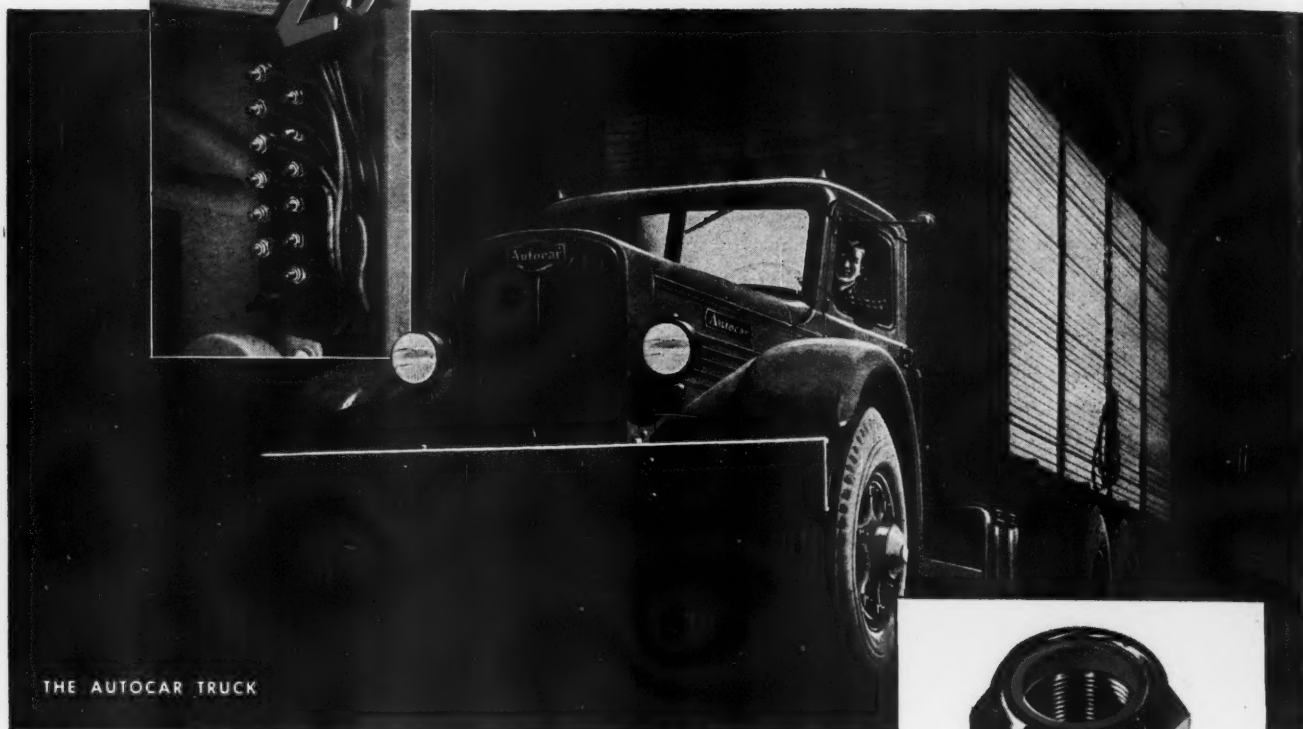
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SELF-LOCKING

*Prevents
Loose Terminals*

ON HEAVY DUTY TRUCKS



THE AUTOCAR TRUCK

*—with the Red Elastic Collar that
protects permanently against VIBRATION*

The adoption of ESNA Elastic Stop Nuts on terminal connections has been a contributing factor to the outstanding reputation of Autocar Trucks for continuous heavy-duty service.

Early test runs proved that ordinary fasteners vibrated loose. Lock washers tore terminal connections and steel fasteners permitted electrolysis and corrosion to 'freeze' mated parts.

Final tests prove that self-locking, self-sealing brass ESNA Elastic Stop Nuts repay their application cost many times over. Their vibration-proof grip makes night driving safer by

preventing light failures... makes continuous performance more certain by preventing ignition failures... makes engine fires less likely by preventing destructive arcing. And easy removal speeds servicing.

ESNA Elastic Stop Nuts protect against Vibration, Corrosion, Liquid Seepage, Thread Failure and Costly Maintenance. They permit full fastener standardization — and its resultant economy. For further information address: Elastic Stop Nut Corporation of America, Union, New Jersey. Sales Engineers and Distributors are conveniently located in many principal cities.



ELASTIC STOP NUTS



INTERNAL
WRENCHING



ANCHOR



INSTRUMENT
MOUNTING



SPLINE



CLINCH

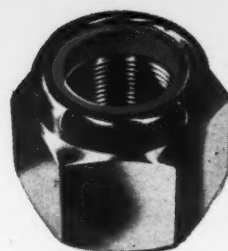


GANG
CHANNEL



CAP

PRODUCTS OF: ELASTIC STOP NUT CORPORATION OF AMERICA



**LOOK FOR THE RED COLLAR
THE SYMBOL OF SECURITY**

It is threadless and permanently elastic. Every bolt — regardless of commercial tolerances — impresses (does not cut) its full thread contact in the Red Elastic Collar to fully grip the bolt threads. In addition, this threading action properly seats the metal threads — and eliminates all axial play between bolt and nut threads.

All ESNA Elastic Stop Nuts — regardless of size or type — lock in position anywhere on a bolt or stud. Vibration, impact or stress reversal cannot disturb prestressed or positioned settings.



THERE ARE *Three* VOLTMETERS ON THE FOX FAST BATTERY CHARGER

Three direct-reading, *waterproof* voltmeters — built to FOX specifications — show at a glance the condition of each individual battery cell. And matched resistances assure maximum accuracy of each reading.

But this is only one of the many features which make the FOX Fast Battery Charger "The Charger of Tomorrow", available today. *Write now for full information!*

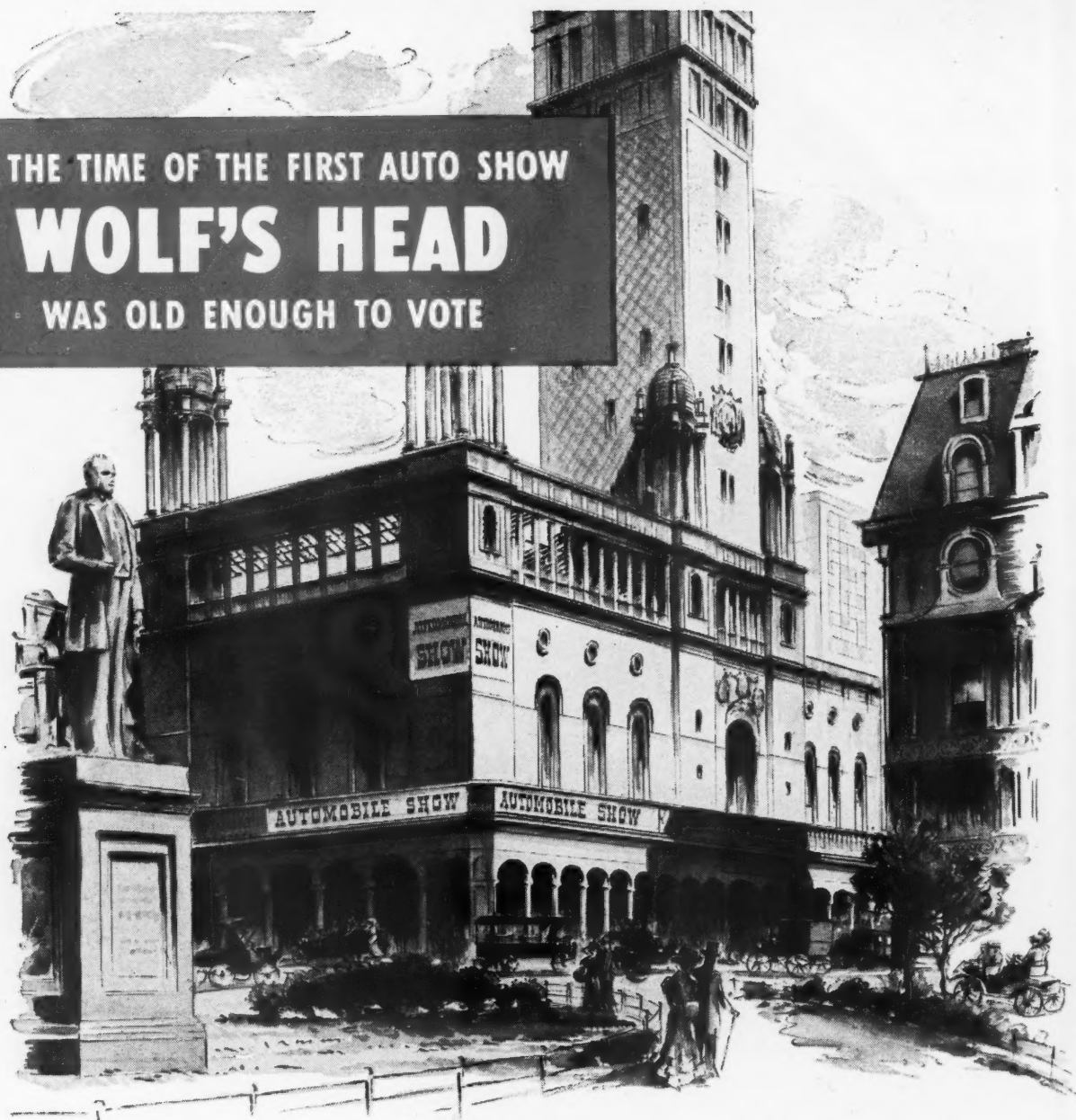
FOX

PRODUCTS COMPANY
PHILADELPHIA 41, PA.

AT THE TIME OF THE FIRST AUTO SHOW

WOLF'S HEAD

WAS OLD ENOUGH TO VOTE



Even before Madison Square Garden had its first auto show way back in 1900, motorists knew about top quality Wolf's Head Oil. In 1900 Wolf's Head had been refining specialized "finest of the fine" petroleum products for 21 years.

And just as Wolf's Head was the choice of early motorists, so it is the choice of car owners today.

For Wolf's Head laboratories have made it a policy to work along with engine designers. As automobile engines were improved and higher and higher speeds

developed, Wolf's Head was always ready with the oil necessary to assure "finest of the fine" lubrication for the newest in motor cars.

Today, Wolf's Head Motor Oil is the finest ever. For tomorrow, Wolf's Head promises that Wolf's Head will continue to keep abreast of new car developments—will continue to be the "finest of the fine" motor oil.

Wolf's Head Oil Refining Co., Inc., Oil City, Pa., New York 10, N. Y.

WOLF'S HEAD

MOTOR OIL AND LUBES

100% Pennsylvania



P.G.C.O.A. Permit No. 6

FINISH 'EM FASTER

AND WITHOUT COMEBACKS—
USE "FACTORY PACKAGED COLORS"



QUICK REASONS WHY

HERE ARE

1 Exact color match to car makers' specs!

2 Eliminates mixing time!

3 Patented pour-top can prevents waste!

4 No comebacks —no headaches!

5 Easier to handle — jobs out on time!

6 Top quality —top beauty —top durability!

7 Available Everywhere ... Call your NAPA Jobber.

MARTIN
SENOUR

The Colors You Want
Ready to Use
Easy to Use



AUTOMOTIVE
FINISHES

IN-SOLIDS TYPE
SPRAYING LACQUER

The MARTIN-SENOUR CO.
2520 Quarry Street, Chicago 8, Illinois

Get this... with this

99%
MAINTAINED
LIGHT OUTPUT

Actual tests prove that the average G-E Sealed Beam Lamp maintains 99% of its original light output up to the very end of lamp life.



(Cutaway of G-E Sealed Beam Lamp)



It is absolutely impossible for moisture, air or dirt to get into hermetically-sealed, all-glass General Electric Sealed Beam Lamps.

Sell G-E Sealed Beam, the lamp that **DOES NOT GROW DIM!**

If headlamps grow dim, seeing distance is cut—often without the driver's knowledge. If he can't *see* in time, he can't *stop* in time! An object which would be visible when lights were *new* might be seen too late if lamps grew *dim*.... This can't happen with G-E Sealed Beam Headlamps! It has

been proved by actual tests that, on the average, they maintain 99% of original light output right up to the end of lamp life. Make night driving safer for your customers—and help yourself to increased sales. Sell G-E—the lamp that **DOES NOT GROW DIM!**

"ALL-GLASS" SEALED BEAM

G-E LAMPS

GENERAL  ELECTRIC



Safeguard
**THE HEART
OF THE
FUEL SYSTEM**

One of the most reliable parts of an engine is the AC Fuel Pump, heart of the fuel system. That's because it's *first quality* in design, material, and manufacture,—built to meet the engine maker's own requirements.

Serve your customers best, and protect your own reputation, by replacing worn pumps with new or factory-rebuilt AC's, and making repairs with authentic AC Parts Kits or Diaphragm Kits.

QUALITY FEATURES

- ★ Careful control of pressure and flow assuring correct fuel supply.
- ★ Accurate hardening, precision machining of parts essential to long life.
- ★ Accurate control of spring tensions and temper.
- ★ High, and controlled, pin hardness.
- ★ 4-layer, patented-impregnation diaphragms of special airplane cloth.
- ★ Carefully finished rocker arm pads, located to center on cam.
- ★ Split-hair rocker arm clearance and control of pad hardness.
- ★ Uniform pull rod hardness at pin holes.

**AC
FUEL
PUMPS**

SEND FOR AN AC PUMP SHOP MANUAL
Field Service Department, AC Spark Plug Division, G. M. Corp.
910 Mott Foundation Building, Flint 3, Michigan
Gentlemen: Please send at once, no charge, the AC Shop
Manuals checked:
☐ How to Service Spark Plugs ☐ HOW TO SERVICE FUEL PUMPS
☐ How to Service Spark Plug Cleaner ☐ How to Service Air Cleaners
☐ How to Service Oil Filters ☐ How to Service Speedometers
☐ How to Service Ammeters and other Instruments .MA-10
NAME
FIRM
STREET ADDRESS
CITY STATE



Clean-Up

with the
SENSATIONAL
NEW
ROCKET
Jet-Powered
VACUUM CLEANER

FOR cleaning interiors, carpets and upholstery of cars, buses, planes, boats. Also for cleaning upholstered furniture, and work benches. Compact—Highly Efficient. Can be used wherever compressed air is available.

An absolutely essential item for every car dealer, service station and repair shop. No moving parts to get out of order. No fire hazard. Connects to air line. Uses but little more

air to clean a car than to inflate a set of tires.

Five minutes with a ROCKET and the car interior is spotlessly clean . . . no mechanic's cigarette ashes, dust, sand or dirt to start a complaint or put the customer in a critical mood. Makes Customers—Friends—and Profits!

MANAGEMENT & RESEARCH, INC.
 Oak Lane and Secane Ave., Primos, Pa.



PRICE \$24⁵⁰

*including 25 ft. of hose.
 West of Mississippi,
 Price 5% higher.*

ROCKET
Jet-Powered
VACUUM CLEANER

**NOW!
NEW! Low Price!**



**New Product Formula gives ① New Super-Strength ② New Freedom from Odor!
New Sales Formula gives ③ New Low Price ④ New Super Package ⑤ New
Super Advertising! All this means New Super Sales and Profits for You!**

Get your order in right now for the new Super-Safe Super Pyro! And get set for the biggest sales and profit year you've ever had, with new super-selling Super Pyro! Backed by the biggest and the hardest-selling advertising campaign in Super Pyro history—color ads in national

magazines, "tested" high-impact local newspaper ads, hard-hitting outdoor posters. The right product plus the right package plus the right price add up to the right sales and profits for you! Be on the safe side, order new Super-Safe Super Pyro now! U. S. INDUSTRIAL CHEMICALS, INC.

**The New
SUPER-SAFE** **SUPER
PYRO**

WHEN A JOBBER SELLS PACKARD CABLE



YOU GET HIS FIRST CHOICE

If a jobber's first thought is for quality, Packard is his first choice in cable. For Packard is an independent line that has won manufacturer, dealer and jobber preference strictly on the basis of quality. This outstanding product—backed by an organization that makes only

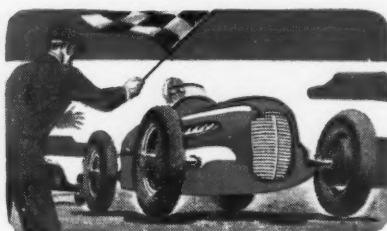
cable in the automotive field—needs no “tie-in sales” or “package deals.” . . . That's why you can be sure that the jobber who offers you Packard cable builds his business on sound and enduring values. And *that's* why you can depend on him for “first choice” products of *all* kinds.

HERE'S WHY YOUR JOBBER CARRIES PACKARD CABLE



He Believes in Quality

... knows that Packard research and manufacturing are concentrated on one line—automotive cable. That's what Packard's been making for more than 40 years.



He Believes in Leadership

... has watched Packard lead the field in the use of plastics, lacquers, synthetics and other developments to make cable last longer, perform better.




He Believes in Sales

... knows that Packard cable has better acceptance, because it is used as original equipment in more new cars than all other makes of cables combined.

YOU'RE RIGHT WITH

Packard
REG. U.S. PAT. OFF. TRADE MARK
 PACKARD ELECTRIC DIVISION
 GENERAL MOTORS CORPORATION
 WARREN, OHIO



FOREMOST BUILDER OF AUTOMOTIVE AND AVIATION WIRING

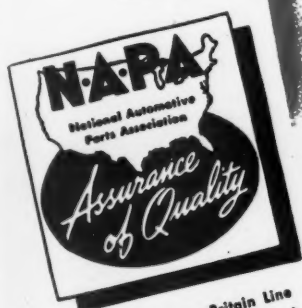


PUT THE **TOUGH NUTS** UP TO *New Britain*

Here's strength to spare against the toughest nuts... no slips, no breaks—but positive knuckle and job insurance. Those are *extras* you get in New Britain Sockets.

New Britain builds its Greater Strength-Better Fit with selected alloy steel—machined with hairsplitting precision, heat treated to rugged perfection and exactly broached for sweet fit—*on the nut!* From $\frac{3}{8}$ " to $\frac{1}{2}$ " square drive, there's a Socket to suit every job... *regular* Sockets for everyday service—*thin wall* Sockets to ease into cramped quarters—*extra-deep* Sockets for spark plug service—*flexible* Sockets to get around corners.

Supporting this hardworking Socket team is a complete Line of New Britain Drive Parts—sturdy Ratchets, Speeders, Flex Handles, and Extensions that combine to see you through the tightest spots. Ask your NAPA Jobber to show you these money-making Tools today! The New Britain Machine Co., New Britain, Conn.



The complete New Britain Line
for Automotive, Aircraft, General
Maintenance & Production Needs
is sold by leading Jobbers.

New Britain

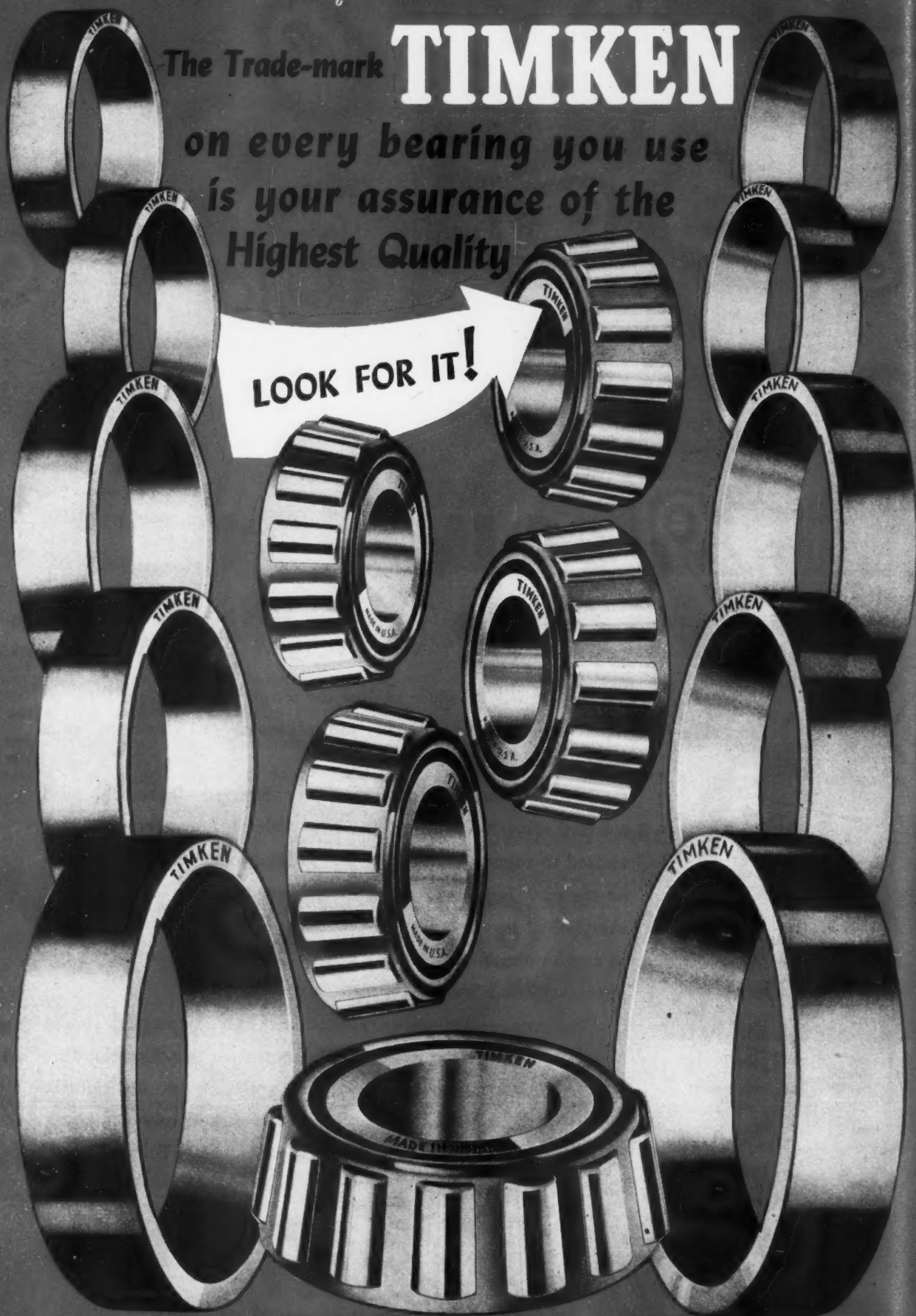
GREATER STRENGTH • BETTER FIT

HAND TOOLS

OCTOBER, 1946

When writing to advertisers please mention *Motor Age*

147



The Trade-mark **TIMKEN**

on every bearing you use
is your assurance of the
Highest Quality

LOOK FOR IT!

THE TIMKEN ROLLER BEARING COMPANY, CANTON 6, OHIO



EVEN A "DEAD DUCK" CAN PACK A PUNCH



**CONTROLLED
BRAKING**

**COMPLETELY
HYDRAULIC**

Eliminates brake lag, improves safety factor,
simple and quick to install, cuts tire wear
and fuel consumption, reduces maintenance.

When brakes depend upon the motor for power, they will not function when the engine is "dead". Costly delays and accidents can be the result.

HYCON brakes are compound cylinders that operate whether the motor is running or stalled . . . at any altitude or temperature, they cannot freeze. They are 100% hydraulic and deliver hydraulic pressures in direct proportion to the pressure on the brake pedal. There is no lag due to atmospheric pick-ups by vacuum or air boosters. The driver has positive brake control at all times, whether his truck is fully loaded or empty; whether roads are slippery or dry.

SAVE GAS—SAVE ENGINE WEAR

Since HYCON brakes do not depend on the motor, the carburetor may be adjusted to the greatest idling efficiency, saving gasoline and engine wear and tear.

HYCON is *controlled* braking which eliminates over-braking and reduces tire-scuffing. Simple and economical installation is possible because no special equipment is needed; few adjustments are required; and no maintenance beyond that of original equipment master cylinders is necessary.

INSTALL A TRIAL UNIT

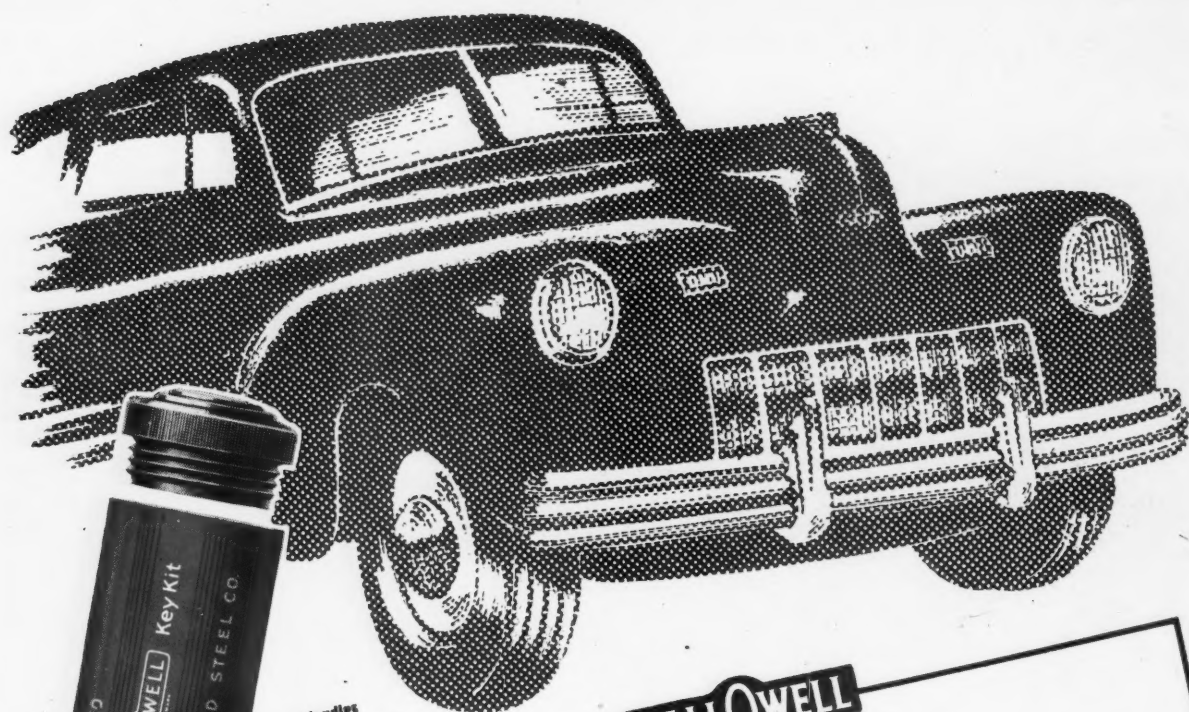
You can prove for yourself the superiority of the HYCON compound cylinder. Now available are units to replace 1¼" and 1½" Di. original equipment master cylinders. Order a trial unit from your local power brake distributor, or write the New York Air Brake Co., 420 Lexington Ave., N. Y. 17, N. Y.

Look for this Registered Trade Mark



THE NEW YORK AIR BRAKE COMPANY

420 Lexington Avenue, New York 17, New York



Handles
Molded Lumarith[®]
A Celanese Plastic

HALLOWELL

"AUTO" KIT

with interchangeable parts

Clutch Head bits, Flat bits, Phillips bits, a Tapered Reamer — all in the handle of this compact, self-contained kit! They are a carefully selected assortment of tools — universally adaptable — in a kit designed, (after lengthy experiment) — to help simplify the task of auto repairing and maintenance.

The Hollowell "Auto" Kit eliminates many steps and toting of cumbersome tools. And it's easy to use: simply select the tool you need from the handle, insert it in the locking swivel bit-chuck — and it is ready for use.

The Hollowell "Auto" Kit is as rugged as any all metal tool . . . made according to rigid Standard Pressed Steel standards. Handle is of durable Celanese[®] plastic; tools of high grade alloy steel.

Write for booklet that fully describes the "Auto" Kit and the other Hollowell Kits: "Socket Wrench," "Socket Screw," and the "Home" Kit. You'll find them the "tool box" you've always wanted.

Available at Hardware and Mill Supply Stores throughout the country. If your Distributor does not carry these kits, send his name to us, along with yours, and you will be taken care of promptly.



"SOCKET WRENCH" KIT

Above: The "Socket Wrench" Kit — containing socket for six and 12 point hex nuts and bolts. In two sizes.

*Reg. U. S. Pat. Off.

OVER 43 YEARS IN BUSINESS

Kits: Patents Pending

STANDARD PRESSED STEEL CO.

JENKINTOWN, PENNA., BOX 431 • BRANCHES BOSTON • CHICAGO • DETROIT • INDIANAPOLIS • ST. LOUIS • SAN FRANCISCO

"Wash Your Windshield



with
Trico's
two little *SQUIRTS*"

● That's the message which Trico repeatedly is telling motorists everywhere through national magazines.

It is making thousands of sales of Trico Automatic Windshield Washers . . . the greatest since this all-weather safe driving accessory was introduced in prewar years.

People like Trico's "two little squirts," for a touch of a button sprays the windshield with clear water . . . and the wiper blades do the rest. On new cars or old, the Trico Washer is an easy-to-install, easy-to-sell profit maker.

ONLY \$6²⁵ PLUS NOMINAL INSTALLATION



*Windshield Washers
and Windshield Wipers*

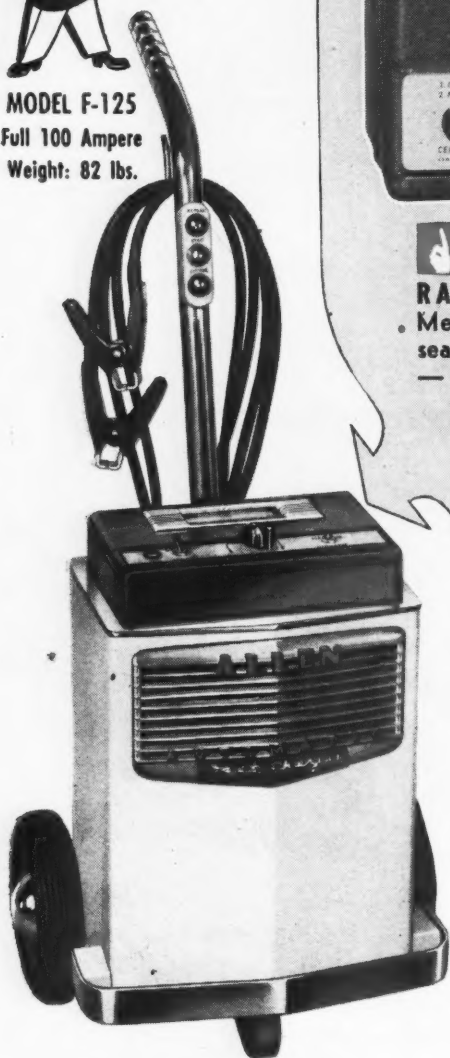
Trico Products Corporation, Buffalo 3, New York

Now is the time to check windshield wiper blades in preparation for winter. Through consistent advertising, Trico is building public acceptance for this universally needed product.

Newest Feature in Fast Charging— AN AUTOMATIC ELECTRONIC CONTROLLER!



MODEL F-125
Full 100 Ampere
Weight: 82 lbs.



Extra Measures of Value

Easy wheeling 8" zero pressure tires • automatic desulphation • chemically anodized high pressure charging clips • 100 amp copper-sulphide rectifying unit guaranteed two years • brushless shaded pole 110 volt motor — 6" fan • relays and solenoids carry heavy currents • overnight freshening charge for 10 or more stock batteries • completion charge at 10 amps for unhurried customers.



Take a look at this Automatic Controller—*brain of the F-125 Fast Charger!* Note absence of complicated dials, switches and time clocks so difficult to use and interpret. But, of course, inside the controller lies the answer as to why the new Allen Charger does such an amazing job. This control mechanism is NOT an ordinary radio circuit—instead it's a computing device similar to radar of war-time fame. Yes, the wonders of electronics make possible the F-125's absolute accuracy and ease of operation!



RAIN AND DUST-PROOF
Meter, switches and selector sealed in special plastic panel — fully protected.



METER INDIRECTLY LIGHTED
Allen built — 4" two-color dial — Alnico movement, most accurate obtainable.



CELLS TESTED INDIVIDUALLY
Socket provides connection to charger meter for locating in-operative cells.



MANUAL SELECTOR SWITCH
Used to select starting position or for changing a sequence whenever desired.

Four Years of Research Produced this COMPLETELY AUTOMATIC Fast Charger

In developing this new Fast Charger, Allen engineers, as in the past, have not been satisfied with anything less than the best. Despite seemingly insurmountable obstacles, they perfected this remarkable equipment, incorporating all the features YOU WANT:

(1) *Automatic operation*, saving you time and eliminating need for close attention; (2) *a small unit*, easily portable for use in crowded quarters; (3) *specially designed clips*, insuring positive connections and preventing current loss.

Your customers will readily understand the signal lights (mounted on handle) which interpret battery conditions: AMBER, initial charge started; RED, battery defective; GREEN, recharging in process — battery O. K.

Yes, from its rubber insulated cables to its gleaming two-tone and chrome finish, the F-125 is a fully engineered NEW model — not just an old charger revamped. You'll agree when you see it that Allen again has developed — "the FINEST to be had!"

**WATCH
THE
LIGHTS**

— that's all you
do — that's all your
customer does!

Your Jobber Has a Floor Sample — Ask to See It!

ALLEN

Equipment

ALLEN ELECTRIC & EQUIPMENT CO.
KALAMAZOO, MICH.



this one *Charms*

this one **CHILLS**



Capper's Farmer

gets

BUYING ACTION

*Let this Automobile Dealer
Tell You About Capper's
Farmer Readers*



Here's what George Weyer, prominent automobile dealer of Blue Earth, Faribault County, Minnesota, had to say about the Capper's Farmer reader list of his area. And remember . . . this is just one of many favorable testimonials from automobile dealers throughout Mid-America.

"This list shows that Capper's Farmer is read by the leading farm families of this area."

Charms and chills are fine. But when it comes to doing things, 1,300,000 prosperous farm families invariably turn to Capper's Farmer. For here is the one magazine geared to their active lives . . . the one magazine that offers these farm men, women and youth the practical help and profitable suggestions they seek. That's why advertisements in Capper's Farmer carry real weight with these dominant farm folk of Mid-America.

Yes, when these top customers see the products you sell advertised in Capper's Farmer, their dollars start coming your way.

The Farm Magazine That

Dominant Farm Families Heed

Capper's Farmer



The "Quality Peak" that Time will never change

**BRAKE PARTS
BRAKE CABLES
BRAKE TOOLS
BRAKE FLUID**



**THE LINE OF
DEPENDABLE
SERVICE**

OUR policy of maintaining Quality at the highest peak could not be more permanent if it were cut in a solid rock.

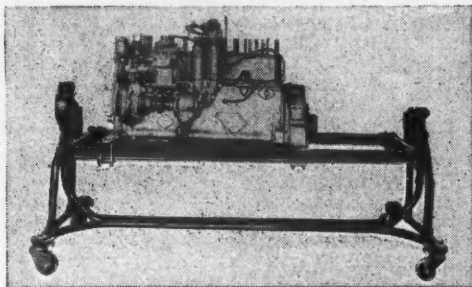
There are times when conditions beyond our control prevent us from giving you EIS Products in the quantities you need . . . but never at any time will we deviate from the principle of rigid adherence to the highest quality standards.

*From your jobber
Write us for literature.*

THE EIS AUTOMOTIVE CORP.
Middletown, Conn.

(Advertisement)

Here Is the Engine Overhaul Stand That Handles All Automotive Engines Up to 3,000 lbs. Weight



UNIVERSAL MODEL AC-4

Entire frame can be rotated to place the engine block in any desired position. Side rails may be adjusted in or out. End sections may be raised or lowered. Mounting plates provided can be mounted either above or below rails and clamped in any position along frame.

Write Clayborne Manufacturing Company, Dept. "M", 209 South La Salle Street, Chicago 4, Illinois, for completely illustrated descriptive literature. In Canada, address James B. Carter, Ltd., Winnipeg.

White Motor Presents Eleven New Models

(Continued from page 127)

Higher volumetric efficiency is claimed because of better filling of the large cylinders what with the more uniform temperature range.

An innovation of these two engines is the gear driven fan mounting which permits lowering of the fan to a more accessible location and more favorable to better cooling. The water pump and generator are driven by belt from the fan mounting.

For this purpose, White has adopted an advanced form of controlled heating and ventilating with temperature control by an adjustable automatic thermostatic device operated by the driver. The system changes air in the cab a number of times per minute and provides a fresh clean atmosphere with windows closed, relatively free from the usual frosting of side windows.

Driver comfort, however, is also tied in with improvements in front end suspension. White has adopted twin-back front springs in conjunction with heavy duty double-acting shock absorbers to produce a cushioned ride for the driver and load. Ease of control also comes from the adoption of the cam and twin lever steering gear.

In the interest of improved maintenance is an easily removable instrument panel which makes accessible all of the wiring harness, cables and plumbing when inspection or servicing is required.

Five-speed transmissions are standard in all models while three-speed auxiliary transmissions are added on the WB-2864 and WB-3264 vehicles. Optional ratios with direct drive either in fourth or fifth gear are available for all models.

Single-production, spiral bevel gear rear axles are standard throughout the line. Either double-reduction or two-speed rear axles are offered as optional equipment, however. Cast malleable iron housings are used exclusively throughout. All models feature increased brake sizes, with Bendix Hydro-Vac equipment on all models, except the WB-2864 and WB-3264 which have air brakes.



Dick Jackson, Dodge Dealer, Houston, Texas

"Ours is one of the oldest Dodge Dealerships in the United States.

"I've watched the automobile business grow from its infancy. I've seen Dodge move up from scratch to its dominant position in the industry today.

"Hundreds of young men have come to me for advice about going into the automobile business. I always tell them the same thing—that Dodge cars and trucks are as fundamental in American life as wheat, corn, or cattle, and that they are tops in quality and dependability.

"To anyone interested in being a Dodge dealer all I can say is that I've been one myself for more than thirty

years. I consider the Dodge dealer contract the most desirable in the automobile business. Why? Because it embraces two superb automobiles and a fine line of trucks in a single agreement, with a huge sales and service backlog in every market.

"As for factory policies as they concern the Dodge dealer, it has been my experience over thirty years that they leave almost nothing to be desired."

• • •

DODGE • PLYMOUTH • DODGE Job-Rated TRUCKS

DODGE—DIVISION OF CHRYSLER CORPORATION
7900 JOS. CAMPAU, DETROIT 11, MICH.

**HYDRAULIC BRAKE CYLINDER
CLEANER AND POLISHER**



Pat. No. 2348132

Muck and scale quickly removed and brake cylinder polished to a mirror finish in a few seconds. Eliminates wasteful outside trips. Does the entire job in your own shop.
\$3.25 FROM YOUR JOBBER

THE WYLAND MANUFACTURING COMPANY
818 John Street Portsmouth, Ohio

Distributed Exclusively
Through
Automotive Wholesalers

Wirey Joe

AUTOMOTIVE CABLE
manufactured by
THE CRESCENT COMPANY, Inc.
Pawtucket, Rhode Island

THE COMPLETE LINE
that
Completely Satisfies

Since 1906
The
Fitzgerald Mfg. Co.
Torrington, Connecticut



Fitzgerald
GASKETS

**FOR AUTOMOTIVE PARTS
AND SUPPLIES...**

*Your NAPA Jobber
is a Good Man to Know!*

NAPA
Is the Largest
Independent Organization
in the Parts Industry



KEN TIRE TOOLS
REG. U. S. PAT. OFF.



LEAD THE
FIELD
ADVANCED
DESIGN
QUALITY
UNSURPASSED

SEE YOUR LOCAL
JOBBER OR
WRITE FOR
LITERATURE

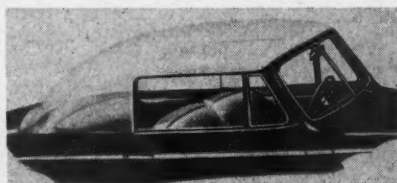
**KEN TOOL
MFG. CO.**
KRON 3, OHIO

SET No. T-300

Plastic Top For Convertibles

For Fords and Mercurys now with other models soon to be produced, the Plastics Div., of The Wright-Austin Co., 317 West Woodbridge St., Detroit 26, Michigan, is making a solid plastic convertible club coupe top, called "Plexi-Top."

Designed to mount with four simple fastenings; the new full vision top does not require the removal of the normal collapsible top



which is kept in the lowered position. Door windows may be raised and lowered in the conventional manner. The assembly is said to be rattle-proof. An additional feature is a roll shade which may be drawn to shut out the sun's rays when desired. The manufacturer states that the top can be had either tinted to match the car, or glass-clear.

Body and Fender Tool

The Automotive Wheel Balancer Corporation of 220 N. Front St., Burbank, Calif., has recently announced the marketing of the Erace-A-Dent; a new tool for body and fender repair. The Erace-A-Dent is a metal-working tool that anyone can use. Most small traffic bumps can be smoothed out in less than five minutes leaving the paint unbroken and the original finish unharmed.

The Erace-A-Dent cuts hammering to a minimum. The only hammering necessary is on the beading or other similar shaped parts of the fender. One of the features of the Erace-A-Dent is that no filing is necessary. Therefore, it does not remove any of the metal, but merely smoothes the wrinkled metal. A special long-reach, interchangeable yoke is available for even such hard to reach spots as turret tops, doors and certain parts of bodies.

For complete information regarding the new Erace-A-Dent, write the manufacturer.

Shurhit
Triple Seal Moisture-Proof
CONDENSERS



Ask your Shurhit jobber or write us for details on these super-quality replacement parts. Complete Shurhit line includes: Condensers, Contact Points, Rotors, Caps, Coils, Brushes, Cut Outs, Switches, and Spark Plugs.

SHURHIT PRODUCTS, INC.
Waukegan, Ill.

The Spot Life is on
KEX
TIRE PLUGS

The Perfect Puncture Seal for Synthetic and Natural Rubber Casings. Three sizes meet all needs.



PAT. FEB. 8/1941
KEX
REG. U.S. PAT. OFF.

The WEDLER-SHUFORD CO.
ST. LOUIS, MO.

You Can Rely On
**FRENCHTOWN
INSULATORS**

Used by more spark plug manufacturers than any other.

FRENCHTOWN PORCELAIN CO.
81 Mulrhead Ave., Trenton, N. J.
(Factory: Frenchtown, N. J.)

WELLS
Genuine Ignition

**USE
PROVED
IGNITION
PARTS**

**QUALITY TELLS
DEMAND WELLS**

WELLS MFG. CORPORATION
FOND DU LAC, WIS.

... For Faster and
More Accurate
BATTERY TESTING

IMPERIAL "K"
No. 515-T
BATTERY HYDROMETER

★ Thermometer Type
★ Shatterproof Glass Jar

THE IMPERIAL BRASS MFG. CO.
1217 W. Harrison St., Chicago 7, Ill.

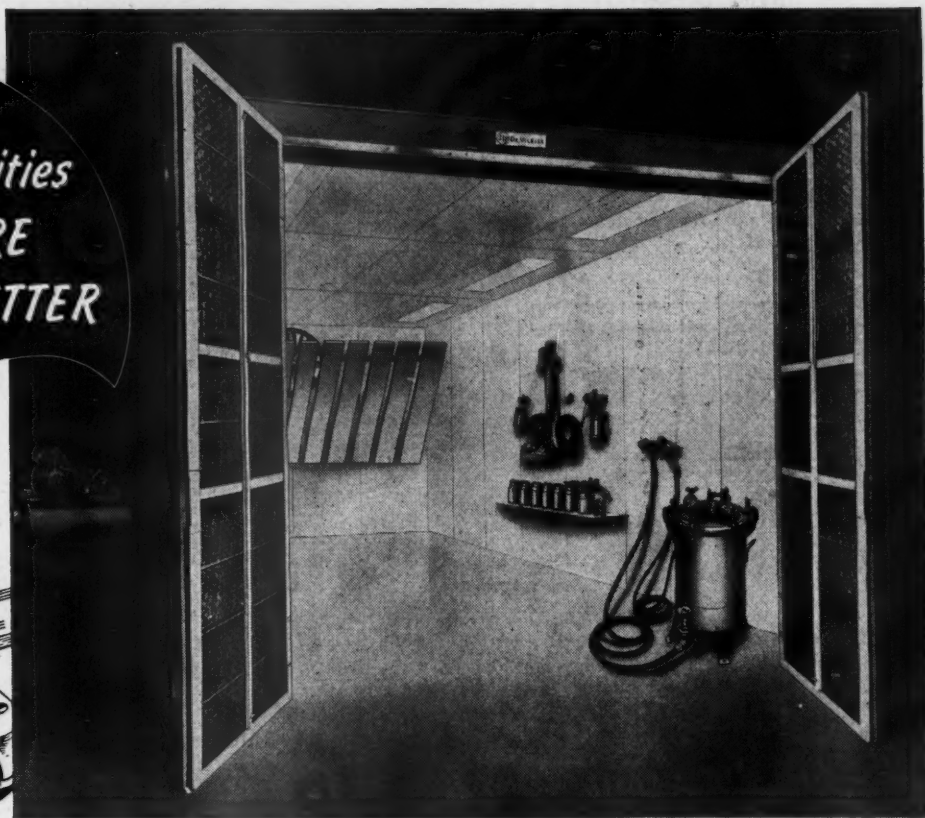


ORDER
FROM
YOUR
JOBBER

Modernize with this **DeVILBISS**

Complete PAINTING DEPARTMENT

*Here are the facilities
to handle MORE
Paint Business BETTER*



To give more customers broader service and do it with greater profit, you need this new DeVilbiss Paint Shop that is approved and recommended by leading automobile manufacturers.

Here in a complete package is all the correct, modern spray equipment you need for handling every job economically. In a specially-lighted, dust-proof spray room you can do underbody coating, minor touch-up or com-

plete body refinishing, with greater ease, more speed and better workmanship. You'll save valuable manhours in sanding and polishing time, too!

With these modern facilities installed in your shop you can better sell your customers on repainting and capitalize on today's tremendous refinishing market. Your DeVilbiss distributor has all the details.

THE DeVILBISS COMPANY, Toledo 1, Ohio

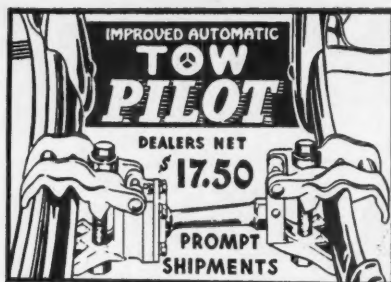
Canadian Plant: WINDSOR, ONTARIO

DeVILBISS



means Quality in all four..

**SPRAY EQUIPMENT
EXHAUST SYSTEMS
AIR COMPRESSORS
HOSE & CONNECTIONS**



THE CHOICE OF OVER
100,000 USERS

One man tows and steers two cars.
Only 60 seconds to attach.
Portable—weighs 23 pounds.

PILOT ADAPTOW COUPLERS

A timely accessory for towing
1946 cars with box style bumpers.
Set of 2 couplers \$7.50 Dealers Net
Price. Order from your jobber or
write us today.

FACTORY SALES DIVISION
PILOT MANUFACTURING CO.
BATTLE CREEK 9, MICHIGAN

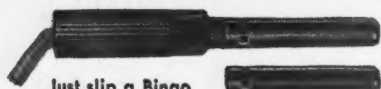
SPRINGS



SERVICE SPRING COMPANY
INDIANAPOLIS 6, INDIANA

Make
BODY SOLDERING
Faster... Easier

with a
BINGO SOLDER KIT



Just slip a Bingo
Solder Tip as-
sembly, using the Bingo No. 2 tip, over the
tip of your welding torch and you're ready to
do a fast job of body soldering. Use of the
No. 1 tip quickly converts the Kit for light
soldering. Uses Acetylene Only.

COMPLETE KIT
Consisting of body
and two tips. } **\$275**

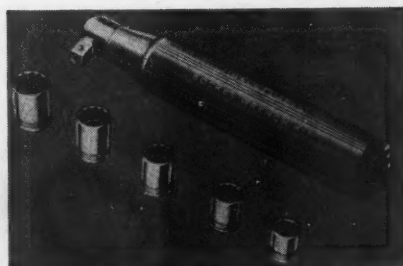
JOBBER! Write for complete merchandising plan.



New Hand Tools

Standard Pressed Steel Co., Box
561, Jenkintown, Pa., is marketing
a line called "Hallowell" Speed
Tool Kits. The interchangeable
tools are carried in the hollow plas-
tic handle.

Four different kits are available:
No. 40, has drivers for use on
socket, Phillips, cap, slotted-head,



and set, screws; No. 50 for all sorts
and sizes of socket-head screws; a
socket wrench kit, which contains
six and twelve point sockets in
sizes from 1/4 in. to 1/2 in.; and No.
15, meant for home use, with a
gimlet, tack lifter, square awl,
Phillips screw driver, 1/4 in. and 1/2
in. flat screw drivers, and a bottle
opener.

Graham-Paige Director

D. Fraser Sullivan, Detroit busi-
nessman, recently was elected a
member of the board of directors of
Graham-Paige Motors. Mr. Sulli-
van, an executive of the Michigan
Insurance Agency, also is associ-
ated with the Dura Division of the
Detroit Harvester Co., Toledo, and
the Hydro Manufacturing Co., De-
troit. He formerly was president of
the M. Sullivan Dredging Co., and
was associated with Marsh & Mc-
Lennan, insurance brokers.



"Why smack your lips? He knows it's
not that good."

KEEP OIL FREE FROM ABRASIVES

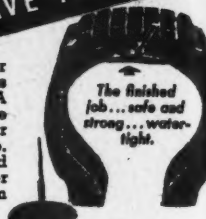


PUROLATOR PRODUCTS, INC.
Newark 2, N. J.

Founder and leader of the oil filter industry

**NEW! BLOWOUT-PROOF
RUBBER RIVETS
SAVE TIRES**

SPEAKER Rubber
Rivets seal nail holes
and small breaks. A
quick pull on the wire
needle makes a repair
that outlasts the tire.
Prevent fabric rot and
blowouts with Rubber
Rivets. Get some from
your jobber today.



J. W. SPEAKER CORP.
Milwaukee 12, Wis.



Bonney Forge & Tool Works
Allentown, Pa.

INVEST IN THE BEST...

HARTMAN HR-53-2
RAPID BATTERY CHARGER
AND ANALYZER



Cooler 100-ampere heavy-duty,
self-healing rectifier—individual
cell-test meters—single-unit pre-
cision adjustment multi-circuit tap
switch cast bronze, insulated,
current-saving battery clamps—
heavy-duty 200-ampere cell-test
and desulphation discharge unit—
massive, waist-high, beautifully
designed, space-saving cabinet—
swivel brake caster and heavy
rubber tires.

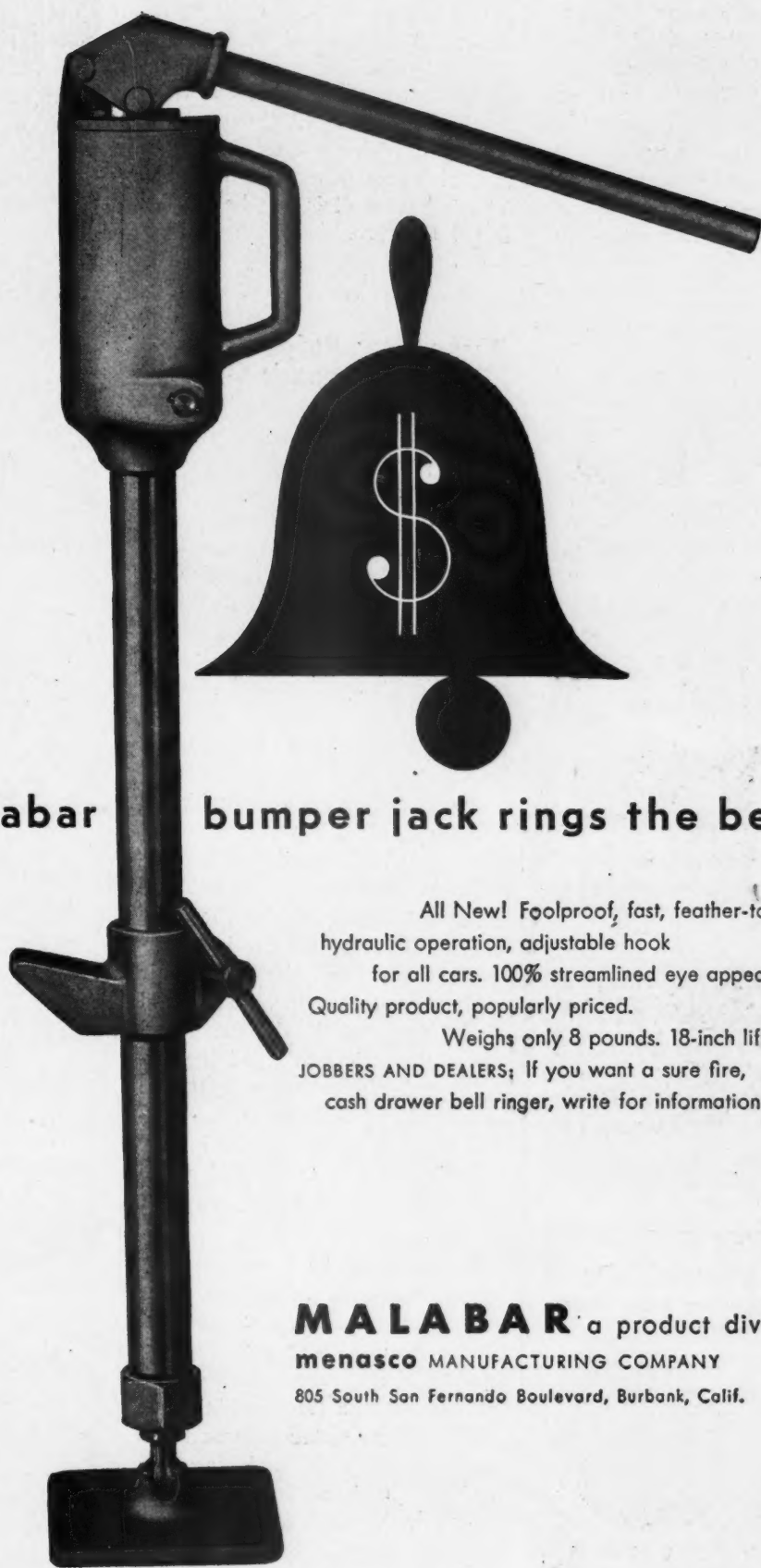
HARTMAN CORP. OF AMERICA
ST. LOUIS 10, MO.

...FOR THE PROFESSIONAL GARAGEMAN and MECHANIC

**SERCO
KI-MO
RUSGO
MOXO
SOLVO
REESO
SHAMO
LUBRO**

permanent repair for cracked cylinder
heads, blocks and leaky radiators.
safe radiator cleaner.
for reconditioning old anti-freeze.
motor vitalizer and penetrating oil.
carburetor, fuel pump, distributor cleaner.
the perfect hand cleanser.
"successor to the chamomile skin."
water pump lubricant and rust preventive.

SERVICE SUPPLY COMPANY
1115 Seventh St. Denver 4, Colo.



new Malabar bumper jack rings the bell

All New! Foolproof, fast, feather-touch hydraulic operation, adjustable hook for all cars. 100% streamlined eye appeal. Quality product, popularly priced.

Weights only 8 pounds. 18-inch lift. **JOBBER AND DEALERS:** If you want a sure fire, cash drawer bell ringer, write for information NOW.

MALABAR a product division of
menasco MANUFACTURING COMPANY

805 South San Fernando Boulevard, Burbank, Calif.

Small-Size Dial Indicator Gage Is Announced

To meet the demand for a small-size dial indicator gage, Federal Products Corp., 1144 Eddy Street, Providence, R. I., offers three new "A" size dial indicators with an overall bezel diameter of only 1 1/4 in. Sturdily built for such small instruments, the new indicators feature an entirely new movement and the same low-friction, full-

jeweled construction as in the regular Federal indicators. The indicators are designated A 1/2 Q, A3Q, A6Q-2 respectively. Model A 1/2 Q is graduated .0001 in.; Model A3Q, .0005 in.; and Model A6Q, .001 in. They are regularly furnished with the American Gage Design Committee (A.G.D.) bracket back, or with post or flat type; special backs are also available. The indicator dials can be rotated to set the zero.

BRAKE SHIM STOCK
RELINING EQUIPMENT

BRAKE FLUID
HYDRAULIC BRAKE PARTS

SOUTHERN

FRICTION MATERIALS CO.-CHARLOTTE, N.C.

STOP

PISTON SLAP
OIL PUMPING
MOTOR NOISE

WITH

MASTER RECAMS

SEE THEM at BOOTH 402, A.S.I. SHOW
Atlantic City, Dec. 9 to 14th

MASTER RECAMS are individually designed for all late model cars; easily installed without removing pistons. The profitable way to Stop Piston Slap, Oil Pumping and Motor Noise.

50¢ EACH

REGULAR DISCOUNTS TO JOBBERS AND DEALERS

WHERRY ENGINEERING COMPANY
3227-29 Morganford Rd., ST. LOUIS 16, MO.



Three New Auto Finish Compounds Offered

Three new automotive rubbing and polishing compounds are announced by Sherwin-Williams Co., Cleveland, Ohio. Said to produce a scratch-free, high lustre on newly refinished cars, or on finishes dingy and faded from wear, the line includes a "Fast-Cut" lacquer hand-rubbing compound, a synthetic hand-rubbing compound, and a mechanical wheel polishing compound.

The "Fast-Cut" lacquer compound contains no hard, sharp or irregular abrasives, and readily breaks up into small, smooth particles on application, giving a high, clean lustre. The synthetic enamel rubbing compound is used on jobs where the original finish of the car is a synthetic enamel and the spot-repair is done with lacquer. The mild abrasive action of the compound makes it possible to blend the lacquer perfectly over the synthetic finish, giving a lustrous, scratch-free finish. It is recommended for removing road film, oxidation, insect stains, etc., from all synthetic finishes.

Enamel must be thoroughly dry before compound is applied. The mechanical wheel polishing compound is used with any type of flexible-shaft, mechanical-wheel polisher. It is a free-working compound with a water base and will not load up on the polishing pad. Both of the hand compounds are applied with a soft, clean cloth and rubbed in with a back and forth motion—never circular. The mechanical wheel compound is applied directly to the car—not to a pad.

SPINNING POWER

-a Companion Product
of Full-Spark Plugs
GLOBE UNION INC.
MILWAUKEE 1, WIS.



FLARES
FOG LAMPS
REFLECTORS
STOP LIGHTS
MARKER LIGHTS
CLEARANCE LIGHTS
DIRECTIONAL SIGNALS
SEALED BEAM CONVERSION KITS

ARROW SAFETY DEVICE CO.
MOUNT HOLLY, N. J.

Smash-Proof CREEPERS

Sold by all leading jobbers
HULBERT MANUFACTURING CO.
Ashtabula, O.

QUIETER STRONGER SELF-CLEANING

You'll make more muffler profits
with Pratt! Ask your jobber now!

PRATT

Spiral MUFFLERS

Pratt Industries, Inc. • Frankfort, N. Y.
In Canada: PRATT CHUCK CO. Ltd. • Toronto, Ont.

Since 1897

UNITED STATES ELECTRICAL TOOLS

have never swerved from their
original standards of **QUALITY
AND SERVICE**

THE UNITED STATES ELECTRICAL TOOL CO.

CINCINNATI, OHIO

TAP THE REAL PIPELINE TO PROFITS

...YOUR JOBBER

When you buy direct through your Jobber, you are tapping a huge reservoir of materials, parts and equipment. Into this pool pour a wide variety of products from thousands of factories all over the country. From this reservoir of available merchandise your Jobber selects items of high quality, performance and service, to fill your every need...

This reserve of wisely selected products, plus the sound technical experience offered by your Jobber, is your real Pipeline to Profits... tap it

FOR CONVENIENCE...

Because centralized buying gets you special consideration... cuts down your paper work... you get price and catalog information *immediately*... you get prompter service on adjustment and complaints... you strengthen your credit position... products you need fast are as close as your phone.

FOR ECONOMY...

Because a Jobber's personalized service gives you most for your money... saves you transportation costs... provides a steady flow of merchandising "know-how" that helps you cut costs... his larger stocks allow you to hold down your inventory... minimize risk of product obsolescence... reduces your storekeeping expense.

YOU CAN BELIEVE YOUR JOBBER...

when he says: **"YOU CAN
MAKE MORE MONEY
WITH McALEER"**
... because
**McAleer means
business.**

On tap at all times through representative Jobbers... McAleer's complete line of 28 Automotive Maintenance and Reconditioning Products have become the backbone of profits in thousands of service establishments from coast to coast. Don't overlook them—ask your Jobber salesman for full details, or write for new catalog and price list.

McAleer

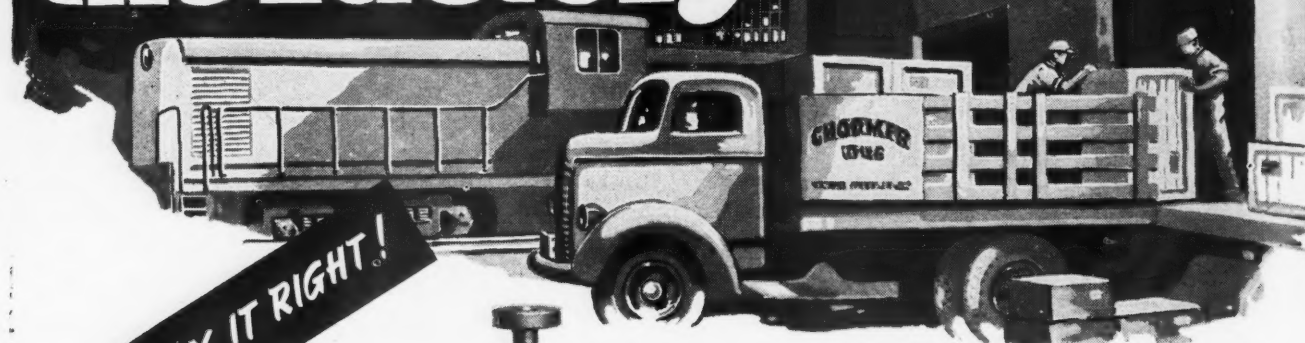
Automotive Division

McALEER MANUFACTURING CO., ROCHESTER, MICH.

AUTOMOTIVE—HOUSEHOLD—INDUSTRIAL PRODUCTS

McAleer Manufacturing Co., Ltd., Chatham, Ontario

Like Sending the Engine to the Factory



Above: HALL Valve
Seat Inserter

Left: Model EJ ECCENTRIC
Valve Seat Grinder

Below: Model 80 HALL
Wet Type Valve Refacer

Servicing valves and valve seats with HALL Factory Approved Valve Servicing Equipment is like sending the engine back to the factory.

That's because HALL Service Equipment enables the shop so equipped to exactly reproduce original factory standards of precision and finish; to restore new standards of performance and economy.

If you have HALL Equipment, tell your customers what you can do and why. If you haven't, consult your Jobber or write direct to the factory for complete information today.

**THE HALL MFG. COMPANY
TOLEDO 7, OHIO**



HALL

Chek-Tabs

BRING 'EM BACK!



SOUND YOUR \$ - \$ - \$ - \$ FOR MORE PROFITS

Every leading maker of oil and automotive products—including famous “sound-your-z” Pennzoil—knows that Chek-Tabs are one of your simplest and surest sales-builders. It's easy to stick a Chek-Tab in the doorjamb of every car you service. And that Chek-Tab constantly reminds your customer when he again needs

service and invites him back to your place. Customers appreciate Chek-Tabs. And Chek-Tabs bring you many a profitable sale you might lose otherwise. There are Chek-Tabs for every service—oil, lubrication, battery, oil filter, radiator cleaning, tire switching, etc. Ask your suppliers of all leading products.



FREE—Get this 20-page book of sales ideas. Here are lots of ways to use Chek-Tabs to build sales. For service stations, garages, car dealers and their suppliers. Write Mystik Adhesive Products, 2640 N. Kildare, Chicago 39.

Sales offices in all major cities. Export office—New York City. Canada—G. A. Moggridge Co., Ltd., St. Catharines, Ont.

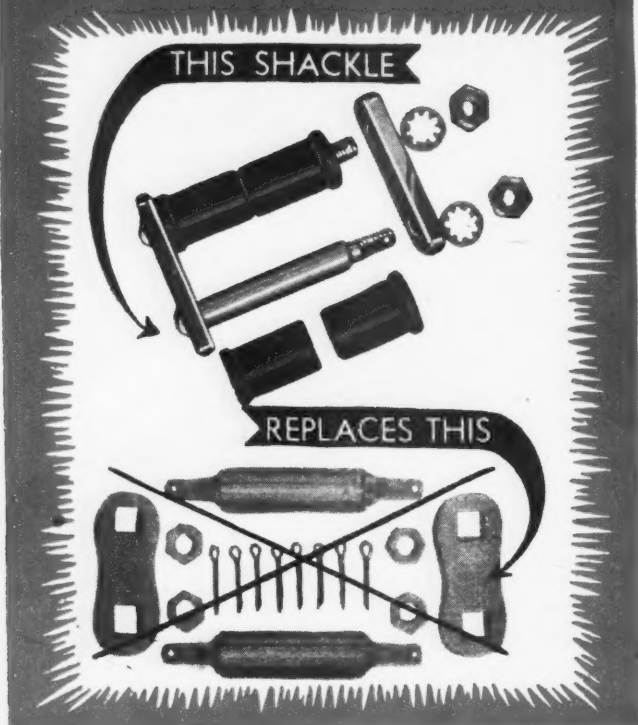


"STICK IT IN THE DOORJAMB"

Self-Stick Cloth and Paper Tapes, Protective and Masking Materials, Waterproof Packaging Papers, Advertising Signs and Displays, Self-Stick Stencils

"CUSHION RIDE"
TRADE MARK REG

RUBBER SHACKLES



Now! Almost every 1946 car is using Rubber Shackles. We offer the genuine "Cushion Ride" Shackle for replacement on Ford and Mercury, Chevrolet, Plymouth, Chrysler, Dodge, DeSoto, etc.

- Stops "Jitterbug Ride" — Permits old cars to have that New, Quiet "Cushion Ride".
- Genuine NEOPRENE Bushings — Oil and Wear Resisting.
- Completely Cushions and Insulates frame from axle.
- Replace old, obsolete shackles.
- Silent in Operation — No lubrication required.
- Easily and Quickly Installed!

Available Now—for

FORD 1928-42 except '33-'34; CHEV. 1934-42, also fits other cars; PLYMOUTH 1935-42 and Chrysler Group.

Expertly made of quality materials throughout. The rubber bushings are molded to correct size and properly cured for easy, perfect fit.

Insist on "Cushion Ride" Shackles because the Neoprene Bushings stand up and deliver long life for complete customer satisfaction.

Send for Catalog

New catalog just off the press! Illustrates our many fast selling items ready for delivery, including Water Pumps and Kits, Solenoid Starter Unit, King Bolt Sets, Shock Links, Special Service Switches, etc.



Sold Thru
Jobbers Only



AUTOMOTIVE MAN'G Co. INC.
1050 W. HUBBARD ST. CHICAGO 22, ILL.

PUT

"thermostat replacement"
on your job ticket



NOTE:
Adjustable—for
summer, alcohol
or permanent
anti-freeze.

Pulling our cars through the war years taught us all a lot about the endurance of individual parts and their relation to overall performance. For example, the cooling system thermostat includes moving parts which wear out. Replacement is simple and incidentally quite profitable—and not, as many used to think, seasonable.

The best time for thermostat replacement is whenever the hose connections are opened. So include the word THERMOSTAT on your shop ticket—and replace as part of every motor tune-up job.

DOLE Replacement THERMOSTATS

THE DOLE VALVE COMPANY

1901-1941 Carroll Ave., Chicago 12, Ill.
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HUDSON TRANSIT LINES
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Gentlemen:

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I am obtaining through the
two years ago, your distributor
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I have called here and explained
the situation. The story seemed
to be in clean lubrication.

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DeLuxe Oil Filters, and the results are
evident for. RESULTS: Our equipment can be
DeLuxe equipped; our motor maintenance
is clean lubrication cut more than we
expected; oil consumption greatly reduced;
better performance from every angle.
I am sure you would care to write me a
letter of satisfaction obtained through the use
of DeLuxe. I gladly take time out to answer
your letter.

I am sure you are using this letter in any
way you see fit, as I feel my own success may
be to someone else.

Sincerely,

Homer Bruning
Homer Bruning
SUPERINTENDENT OF MAINTENANCE

"...DeLuxe story seemed beyond what
could be expected...decided to
"call the bluff"...RESULTS: Our
equipment now 100% DeLuxe-Equipped
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consumption greatly reduced...
motors giving better performance...
Should bus operators write, I will
gladly answer."

(Signed) Homer Bruning, Superintend-
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Lines, Mahwah, N. J.

Hudson Transit CALLS OUR "BLUFF"

Old ideas die hard. It's difficult for many fleet operators to appreciate what really CLEAN oil can mean in engine performance, because THEY NEVER HAD CLEAN OIL, and they can think of it only in terms of partly-cleaned oil—which is as different as the difference between fresh-from-the-cow (infected) milk, and pasteurized milk... Like many another, Mr. Bruning, here, couldn't believe the DeLuxe "claims"; he decided to "call our bluff". He's a hundred-per cent-er now, like anybody who gives DeLuxe a trial. Isn't it about time YOU "called our bluff"? WHAT'S STOPPING YOU? ...DELUXE PRODUCTS CORP., 1404 Lake Street, La Porte, Indiana.

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It is no accident that in the last Nat'l Bus Transp. Awards for Maintenance Efficiency, ALL 15 of the 15 winners were DeLuxe-Equipped... BIG THINGS are happening in lubrication! WRITE! Get FREE DeLuxe booklet.

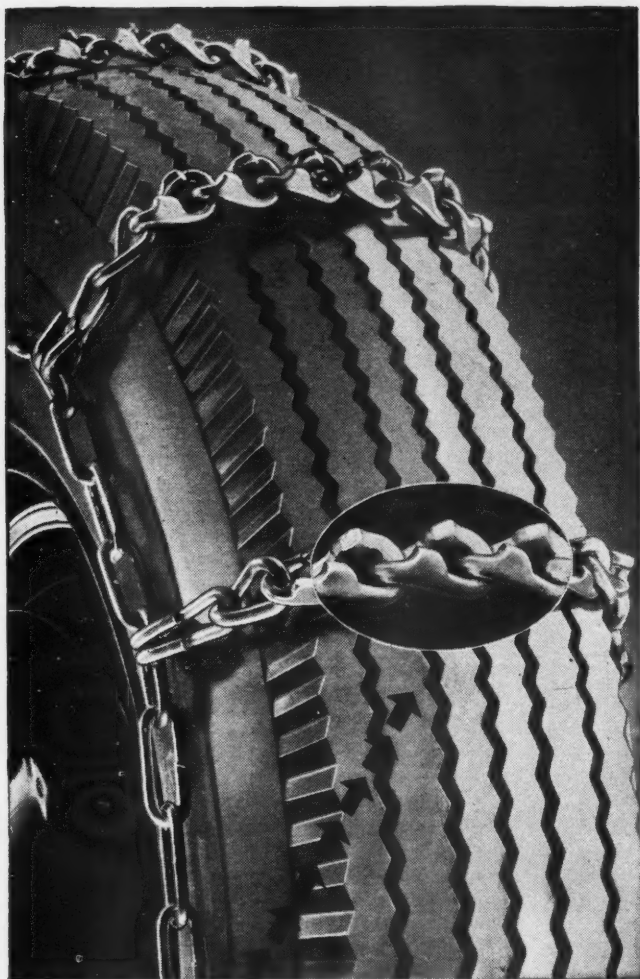


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DOES MORE THAN STRAIN OIL... MORE THAN FILTER OIL
ACTUALLY CLEANS OIL

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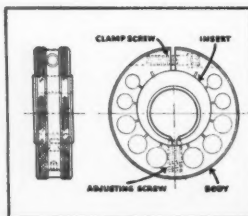
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MATERIALS • METHODS • SERVICE • FOR EVERY CLEANING REQUIREMENT



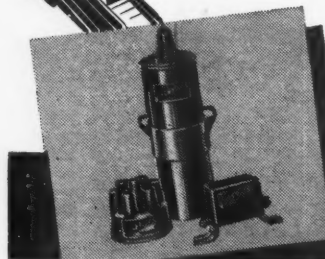
**how high
do you have to go
to be a hero?**

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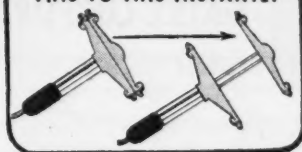
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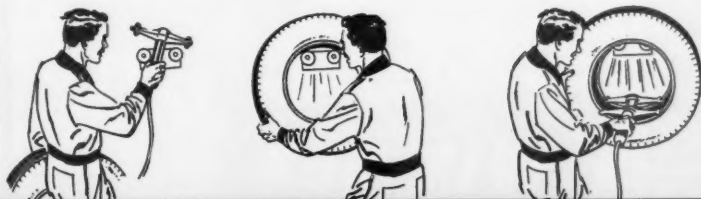
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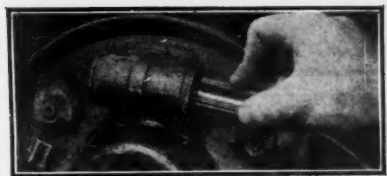
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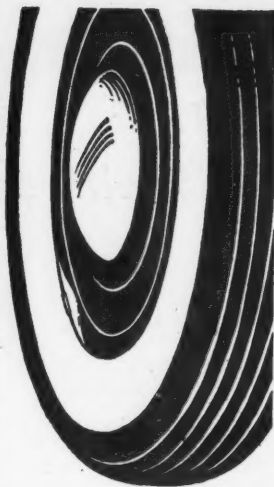


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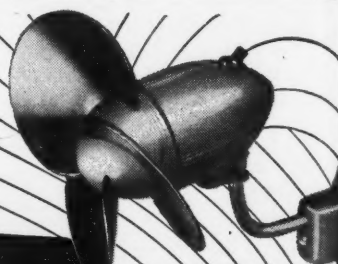
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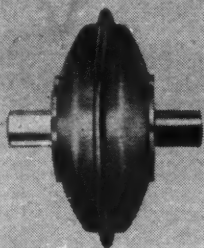
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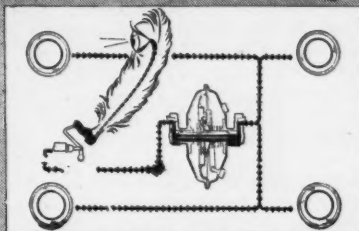


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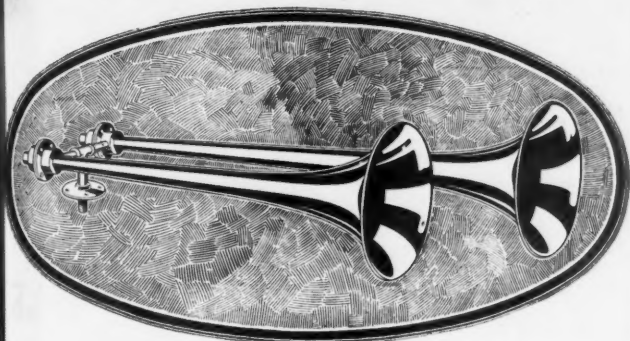
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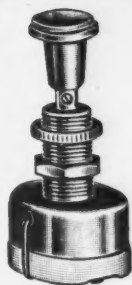
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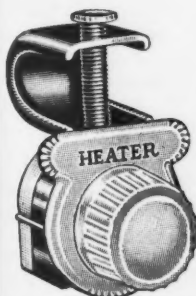
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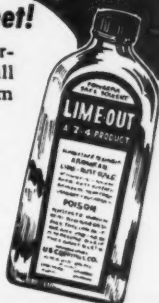
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A C Spark Plug Div. General Motors Corp.	98-143
Air Reduction Sales Co.	108
Airtex Automotive Division.	6
Allen Electric & Equip. Co.	152
Allied Motor Parts Co.	87
Aluminum Co. of Amer.	129
Amalie Div.	102
American Chain & Cable Co.	133
American Hammered Piston Ring Div. of Koppers Co.	Back Cover
Aro Equipment Corp., The.	59
Arrow Safety Device Co.	160
Auto-Lite Battery Corp.	84-85
Auto Specialties Mfg. Co.	114-115
Automotive Accessories Mfrs.	68
Automotive Mfg. Co., Inc.	164
Autopulse Corporation	135

Beaverdell Co.	158
Black & Decker Mfg. Co.	121
Blackhawk Mfg. Co.	55
Blue Crown Spark Plug Co.	101
Bonney Forge & Tool Works.	158
Borg-Warner Corp.	1
Bowes "Seal Fast" Corporation	16
Buell Manufacturing Company	173
Burd Piston Ring Co.	111
Capper's Farmer	153
Carter Carburetor Corp.	167
Casite Corporation	53
Central Equipment Co.	116
Central Tool Co., The	90
Champ-Items, Inc.	127
Char-Lynn Co.	171
Chefford Master Mfg. Co., Inc.	166
Chevrolet Motor Div.	123
Chicago Show Printing Co.	163
Chrysler Corp. (Parts Div.) ..	65
Circo Products Company.	83
Clawson & Bals, Inc.	119
Clayborne Mfg. Co.	154
Continental Rubber Wks.	134
Crescent Company, Inc., The.	156

Delco Radio Div.	51
Delco-Remy Div.	7
DeLuxe Products Corp.	165
De Vilbiss Company, The.	157
Dodge Div. Chrysler Corp.	155
Dole Valve Co.	164
Durkee-Atwood Co.	72

Edelmann & Co., E.	93
Egan Mfg. Co., H. B.	118
Eis Automotive Corp., The.	154
Elastic Stop Nut Corp.	138
Electric Auto-Lite Co., 12-13-62-63-84-85	
Electric Storage Battery Co.	103
Emerol Mfg. Co., Inc.	80
Empire Electric Brake Co.	173
Fairmount Tool & Forging Co.	58
Fitzgerald Mfg. Co., The.	156
Ford Motor Co.	109
Fox Products Company.	139
Fram Corporation	117
Freedom-Valvoline Oil Co.	136
Frenchtown Porcelain Co.	156

Gatke Corporation	172
General Electric Co.	142
General Tire & Rubber Co.	76-77
Gerlach Co., E. A.	74
Globe-Union, Inc.	160
Guide Lamp Div.	105

INDEX TO ADVERTISERS

This Advertisers' Index is published as a convenience, and not as part of the advertising contract. Every care will be taken to index correctly. No allowance will be made for errors or failure to insert



Hall Mfg. Co., The	162
Hansen Mfg. Co., The.	125
Hartman Corp. of America.	158
Hastings Mfg. Co.	2nd Cover
Hollingshead Corp., R. M.	57
Hulbert Manufacturing Co.	160
Hygrade Products Co., Inc.	172
Hyland Manufacturing Co.	156

Imperial Brass Mfg. Co.	156
Independent Pneumatic Tool Co.	130-131
Inland Mfg. Div.	81
Inland Rubber Corp.	9
International Chain & Mfg. Co.	166

Johnson Bronze Co.	112
-------------------------	-----

K-D Mfg. Co.	82
Ken Tool Mfg. Co.	156
King Quality	10-11
Klemm Automotive Products Co.	124
Koppers Co., American Hammered Piston Ring Div.	Back Cover

Lempeo Products, Inc.	64
Libbey-Owens-Ford Glass Co.	88
Lion Auto Parts & Mfg. Co.	54
Littelfuse, Inc.	113
Logan Engineering Co.	60
Lynn Products Co., Inc.	173

McAleer Manufacturing Co.	161
McQuay-Norris Mfg. Co.	96-97
Management & Research, Inc.	144
Maremont Automotive Prod. Inc.	95
Martin-Senour Co., The.	141
Marville Dwyer, Inc.	172
Menasco Manufacturing Co.	159
Micro-Linor Service Corp.	50
Mid-Western Auto Parts	172
Moog Piston Ring Co. Div.	
Moog Industries, Inc.	5
Motor & Equipment Wholesalers Assn.	48
Mystik Adhesive Products.	163

National Automotive Parts Association	156
Neilson Chemical Co.	172
New Britain Machine Co.	147
New York Air Brake Co., The	149
Niehoff & Company, C. E.	71

Oakite Products, Inc.	170
Oil-Dri Co. of Amer.	173

Packard Electric Div.	146
Packard Motor Car Co.	175
Panef Mfg. Co.	49
Pedrick Piston Rings	8
Pennzoil Co., The	86
Permatex Co., Inc.	3
Pilot Mfg. Co.	158
Power Brake Parts Co.	110
Practical Products Co.	104
Pratt Industries, Inc.	160
Prest-O-Lite Battery Co., Inc.	66-67

Puritan Company, Inc.	78
Purulator Products, Inc.	158
Pyrene Mfg. Co.	120

Ramsey Corporation.	Third Cover
Resistoflex Corp.	169
Rinck-McIlwaine, Inc.	172

Safety & Maintenance Co., Inc.	128
Saturday Evening Post.	106-107
Schildmeier Co., H. C.	14
Schrader's Son Div., A.	99
Service Spring Co.	158
Service Supply Company.	158
Sheldon Machine Co.	170
Shurhit Products, Inc.	156
Siebring Manufacturing Co.	92
Si-En-Tif-Ik Products Co.	89
Sight Feed Generator Co., The	94
Snap-On Tools Corp.	61
Sonneborn Sons, Inc., L.	102
South Bend Lathe Work.	170
Southern Friction Materials Co.	160
Speaker Corporation, J. W.	158
Standard Motor Products, Inc.	170
Standard Pressed Steel Co.	150
Studebaker Corp.	45

Texas Company, the.	2
Thermoid Co.	69-70
Thompson Products, Inc.	75
Timken Roller Bearing Co., The	148
Trainer National Spring Co., Inc.	168
Trico Products Corp.	151
Trindl Products, Ltd.	171

U. S. Chemical & Supply Co.	173
U. S. Industrial Chemicals, Inc.	145
United Motors Service Div. G. M.	79
United Parts Mfg. Co.	100
United States Electrical Tool Co., The	160

Vaco Products Co.	168
Wagner Electric Corp.	91
War Assets Administration.	126-176
Warner-Patterson Co.	122
Waterbury Tool Div.	4
Waverly Petroleum Products Co.	128
Wayne Pump Co., The.	132
Wedler-Shuford Co.	156
Weidenhoff, Inc., Joseph.	15
Wells Mfg. Corporation.	156
Wherry Engineering Co.	160
Wilco Products, Inc.	171
Wilkening Mfg. Co.	8
Willard Storage Battery Co.	73
Wiry Joe	156
Wittie Mfg. & Sales Co.	172
Wolf's Head Oil Refining Co.	140
Wood Co., Frank N.	47
World Bestos Corp.	137
Wrigley Jr., Co., Wm.	168



"Yes" Men? No, Sir!

Remember that headline? We used it back in '44 over a picture of Packard's first Dealer Advisory Council.

And how right we were!

From our Council members, our top executives hear the plain-spoken . . . out-spoken . . . viewpoints of dealers large and small. The membership is rotated periodically to get the thinking of dealers from every section of the country.

Does this pay off for Packard dealers? Decidedly yes! The Council has made important contributions to:

- Packard's Dealer Sales Agreement
- Dealer Equities Board
- Open-book car distribution plans
- Effective advertising
- Timely parts and service programs
- Farsighted sales training plans
- Car design
- Production planning
- Sales area protection

It's just additional evidence that Packard policies are geared to field thinking.

PACKARD

"A good company to do business with"

ASK THE MAN WHO OWNS ONE



"IF THAT TOP KICK COULD JUST SEE ME NOW!"



VETERANS! WHY NOT RUN YOUR OWN BUSINESS?

You can cash in on what you learned in the army about welding. Thousands of 200, 300 and 400 Ampere AC and DC Arc Welding units are surplus and available to you on veteran priority. There are large quantities of Hobarts and Lincolns, quite a few Westinghouse and fair amounts of other makes for sale now. Most of the equipment is used and in good operating condition. Best of all, it is being sold at prices you can afford in setting up your own repair shops or for contract work. Write, wire or phone the nearest War Assets Administration Regional Office below or come in and ask for the special veterans' service section.

FREE INFORMATION

For full information clip and mail this coupon to War Assets Administration:

Please send me complete information on the availability, condition and location of the following types of equipment:

- ☐ Hobart Arc Welders
☐ Lincoln Arc Welders

Arc Welding Equipment:
Electric Motor Driven:
Transformer Type:

- ☐ Westinghouse Arc Welders
☐ Electrodes and Welding Rods

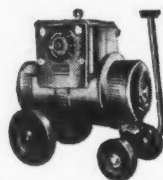
AC..... DC.....
Volts..... Phase..... Cycles.....
Volts..... Phase..... Cycles.....

Name.....

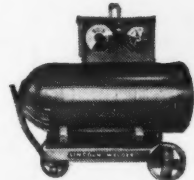
Firm.....

Address.....

City..... State.....



Hobart — Standard models of this make available in large quantities and most ratings.



Lincoln—In all models and most ratings. Hundreds in the popular 300-400 Ampere size.

EXPORTERS: Most surplus property is available to the export market. Merchandise in short supply is withheld from export, and if such items appear in this advertisement they will be so identified by an asterisk.

All arc welders are subject to priority regulations. **VETERANS OF WORLD WAR II** are invited to be certified at the War Assets Administration Certifying Office serving their area, and then to purchase the material offered herein.

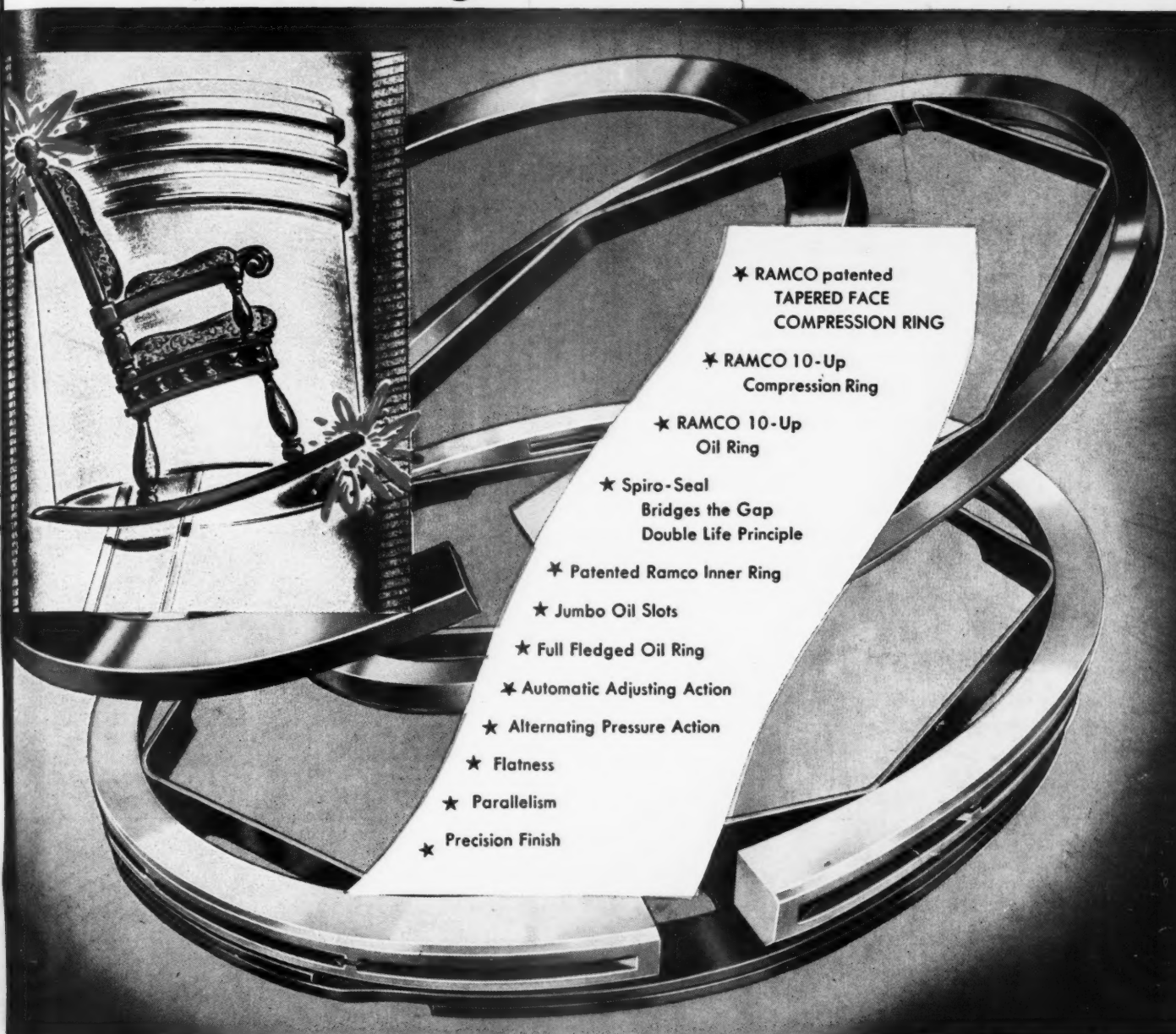
WAR ASSETS ADMINISTRATION

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SURPLUS

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To stop "rocking chair action" LONGER...



- ★ RAMCO patented
TAPERED FACE
COMPRESSION RING
- ★ RAMCO 10-Up
Compression Ring
- ★ RAMCO 10-Up
Oil Ring
- ★ Spiro-Seal
Bridges the Gap
Double Life Principle
- ★ Patented Ramco Inner Ring
- ★ Jumbo Oil Slots
- ★ Full Fledged Oil Ring
- ★ Automatic Adjusting Action
- ★ Alternating Pressure Action
- ★ Flatness
- ★ Parallelism
- ★ Precision Finish

...all are essential!

 Remember, no SINGLE Ramco feature does the whole Ramco 10-Up job. Ramco features were designed to WORK TOGETHER; you get Ramco results ONLY when you have ALL the features of ALL rings comprising the Ramco 10-Up set. That's why there may be imitation of an isolated Ramco feature—but NO imitation of Ramco's total effect! That's why Ramco

10-Up is the reliable, business-building ALL-PURPOSE ring that makes experienced repair men say, "You do the job right with Ramco 10-Up"...right for the car owner, right for yourself!...Ramsey Corporation. 3718 Forest Park Blvd., St. Louis, Mo. Factories: St. Louis; Fruitport, Mich.; Toronto, Canada.

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THE ALL-PURPOSE PISTON RINGS BACKED BY A 10,000 MILE RING AND LABOR WARRANTY

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There are hundreds of **A-H** combinations specifically engineered for the replacement field, for every engine condition! That's why American Hammered jobbers can supply the one right set for any degree of wear in any model of any make of engine.

Those to whom efficient engine performance is the only measure of piston ring value, rate American Hammered the "ring leader". They rely on A-H rings in every size . . . of every type . . . for every purpose. They know that A-H sets match any job.

Koppers Company, Inc., American Hammered Piston Ring Division, Baltimore, Maryland

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Hammered
Piston Rings

STEEL-EDGE SET

SET NO.

107

This Set Consists of

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8 - 3 $\frac{3}{32}$ x $\frac{7}{32}$ Flex. Power
8 - 3 $\frac{3}{32}$ x $\frac{7}{16}$ OilCutter
8 - 3 $\frac{3}{32}$ x $\frac{7}{16}$ Steel-Edge

A-H multiple-piece
Steel-Edge Ring Set

American Hammered Piston Rings

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